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THE POTENTIAL LINKAGE BETWEEN EMERGENCY MEDICAL SERVICES SYSTEM--ETC(U)

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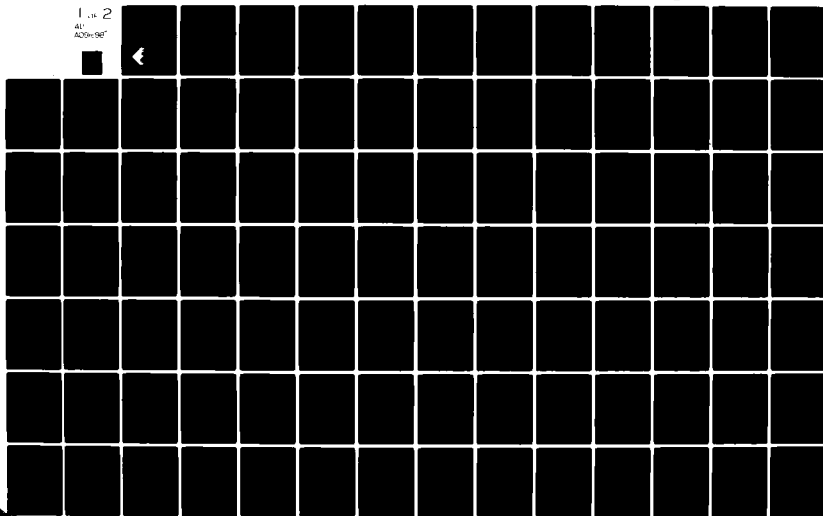
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THE POTENTIAL LINKAGE BETWEEN EMERGENCY MEDICAL  
SERVICES SYSTEMS AND HEALTH SYSTEMS AGENCIES TO  
CIVIL DEFENSE RELATED HEALTH AND  
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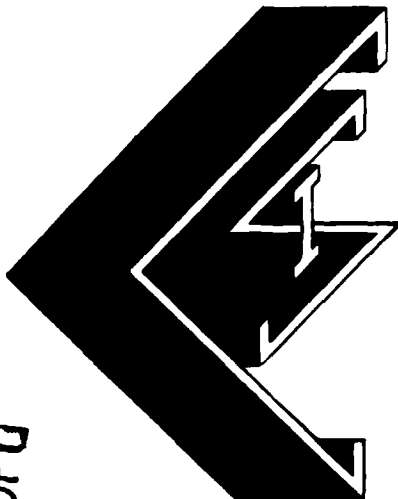
FINAL REPORT

CONTRACT NO. DCPA 01-79-C-0232  
WORK UNIT 2422H

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July 1980

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For

Federal Emergency Management Agency  
Washington, D.C.

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ABSTRACT (Continued)

✓ All of the interviews focused on the potential role, as opposed to how the HSA's and EMSS currently relate to Civil Defense, emergency health, and medical care plans and operations.

The overall conclusion was that the HSA role is marginal while the potential EMSS role could be very significant with minor alterations in program emphasis.

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## PREFACE

In 1973 and 1974, two major health planning and medical care delivery programs were enacted into law.

- The Emergency Medical Services Systems Act of 1973 (EMSS)
- The Health Planning and Resources Development Act of 1974

The EMSS act essentially provides funding for local grantee groups to improve the efficiency and generally upgrade the quality of emergency medical care delivery.

The Health Planning and Resources Development Act provides funding to establish a network of Health Systems Agencies (HSA's) to coordinate health planning and development in terms of resource management, utilization patterns and facilities construction.

The potential linkage between Civil Defense medical planning and the organizations created by the above legislation is the subject of this report.

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## TABLE OF CONTENTS

PREFACE	ii
I. SUMMARY	1
II. BACKGROUND DISCUSSION	2
A. Problem	2
B. Overview of the Emergency Medical Services Systems Act of 1973	6
C. Overview of the Health Planning and Resources Development Act of 1974	7
III. PROCESS	10
A. Study Objective	10
B. Study Methodology	10
IV. EMSS/HSA LINKAGE TO CIVIL DEFENSE	13
V. HEALTH AND MEDICAL PLANNING FUNCTIONS	31
A. Primarily Non-Health Department Responsibilities	31
B. Primarily Health Department Responsibilities	41
VI. DISASTER MEDICAL PLANNING IN THE SAN FRANCISCO BAY AREA	62
VII. CONCLUSIONS AND RECOMMENDATIONS	66
A. Issues Specifically Related to the Subject of this Study	66
B. Issues Not Specifically Related to the Subject of this Study	67
APPENDIX A — Conference on CD Related Emergency Medical Planning	A-1
APPENDIX B — State Emergency Health Service Planning Functions: Responsible Agency	B-1
APPENDIX C — State Emergency Health Service Planning Functions: Potential Agency Input	C-1
APPENDIX D — San Francisco Bay Area Planning	D-1

## I. SUMMARY

The primary objective of this study was to examine the extent to which Health Systems Agencies (HSA's) and Emergency Medical Services Systems (EMSS) could fulfill Civil Defense related health and medical care functions. The study process involved extensive on-site conversations with a variety of health professionals in Colorado, California, and Pennsylvania. The purpose of the conversations was to tabulate their various opinions regarding the potential linkage between EMSS and HSA's to the Emergency Health Services functions as listed in appendices B and C.

In addition to an examination of the specific potential ways in which EMSS and HSA's could assume a Civil Defense-related responsibility, the report also presents a discussion of the various health and medical related functions which are generally perceived to be the primary responsibility of the Civil Defense component of the Federal Emergency Management Agency.

The on-site visits to California included contact with all the groups involved with the San Francisco Bay Area earthquake planning and an examination of the EMSS role in that process.

The essential findings of the study are that:

- The primary responsibility for the mobilization and management of health resources in major mass casualty emergencies must remain with the State Health Department.
- Civil Defense related participation of HSA's cannot be anticipated.
- While EMSS organizations offer a great deal of potential Civil Defense related interactions, a meaningful participation on their part would be largely dependent upon additional staff and therefore increased funding.



## II. BACKGROUND DISCUSSION

### A. PROBLEM

The capability of Government, both Federal and State, to effectively deal with the medical aspects of the emergency management of large scale disasters has been steadily declining since the late 1960's. The reasons for the decline are several.

- Absence of Federal level assistance and planning guidance;
- Misplaced confidence in the civilian disaster response capability of the military;
- Misunderstanding of the disaster related response potential of existing Emergency Medical Services Systems;
- Inaccurate perception of the relationship between the management of natural disasters and war related disasters.

#### 1. Absence of Federal Level Assistance and Planning Guidance

In the early 1970's the Federal government essentially disbanded its activities associated with Emergency Health Service (EHS) planning and operational responsibilities. This process involved the:

- Dismantling of the PHS-Division of Health Mobilization;
- End of Federal support to the Medical Self-Help Program;
- End of Federal funding assistance to State and local disaster health planners;
- Discontinuence of PHS-sponsored EHS training activities;
- Phase-out of the National Emergency Medical Stockpile;
- Phase-out of the Hospital Reserve Disaster Inventory; and
- Giving away of approximately 2,100 prepositioned Packaged Disaster Hospitals.

2. Misplaced Confidence in the Civilian Disaster Response Capability of the Military

For reasons which are not particularly clear, the Secretary of DHEW in 1973 made the following statement to the Joint Committee on Defense Production:

*"The 1974 Budget reflects the conclusion that the existing Department of Defense medical capability, particularly the Army Field Hospital System with its backup of medical supplies, should provide adequate protection for the civilian population as well as the military in the case of any major natural disasters. This same defense medical capability will also be the primary Federal contribution in the case of nuclear attack."*

This statement was a major justification for dismantling the PHS stockpile and other related activities. The last sentence implies that the U.S. military has sufficient defense medical capability to make a meaningful impact on a nuclear crisis situation. This is not true. The military does not have such resources, and has no intentions or plans to carry out such responsibilities.

3. Misunderstanding of the Disaster Related Response Potential of Existing Emergency Medical Services Systems (EMSS)

Unfortunately, there is fairly widespread misunderstanding of the disaster related role of existing EMSS organizations. This has led to a certain amount of false security particularly at the Federal level of responsibility. While EMSS organizations are mandated to provide emergency medical care, they are not, either in practice or in theory, concerned with the broader aspects of a crisis-related health care response.

The title Emergency Health Service (EHS) has traditionally been given to delivery systems which were designed to encompass all aspects, including emergency medical services, of the health-related response to a crisis situation.

Since these two acronyms (EMS/EHS) are often confused, for purposes of this report it is important to clearly understand the meaning of each:

a. EHS -- Emergency Health Services

Emergency Health Services encompasses all the health and medical related activities which would be required in very large scale national disasters and in a national crisis such as general war. The services would include:

- Emergency medical care,
- Emergency transportation and communication,
- Management and control of all health resources including personnel,
- Maintenance of vital statistics,
- Sanitation,
- Nutrition,
- Epidemic surveillance and control,
- Rehabilitation services,
- Mental health,
- All other public health-related services.

b. EMS -- Emergency Medical Services

Emergency Medical Services encompass only those activities which have a direct bearing on the actual delivery of emergency medical care either in national crisis or in lesser emergency situations. These activities would essentially be limited to providing the facilities, equipment, supplies and manpower for:

- Emergency medical care,
- Emergency transportation and communication.

4. Inaccurate Perception of the Relationship Between the Management of Natural Disasters and War-Related Disasters

An issue which tends to confuse the overall FEMA planning process is that existing plans for the provision of health services in disaster, particularly those developed at the hospital or the community level, inordinately stress or completely limit themselves to the potential problems of natural disasters such as fires, floods, epidemics, earthquakes, plane crashes, etc. The confusing factor is that it is widely held, even at the Federal level of

preparedness planning, that community activities which increase this local operational capability to meet the increased demands of emergency health services in natural disaster will also increase the community's ability to cope with the medical aspects of a nationwide crisis such as nuclear attack or a series of widespread and simultaneous major terrorist actions.

This direct relationship is not always true. While many aspects of local preparedness to cope with medical aspects of natural disaster (i.e., epidemics) will definitely upgrade nuclear attack countermeasure capability, much of such natural disaster preparedness has little or no bearing on the requirements in general war situations. Moreover, there are elements of natural disaster emergency plans which might actually reduce the community's capability to provide emergency health services in a nuclear attack environment. For example:

- Plans for war related disasters usually call for:
  - Fallout
  - Deferred operational response
  - Dispersion of medical resources
  - The most austere medical and surgical standards
  - Unavailability of sufficient personnel and facilities
  - Unavailability of meaningful outside assistance
  - Possibility of massive population relocation
  - National and state, as well as local and areawide, pre-crisis planning coordination
- Plans for natural disasters usually call for:
  - Immediate operational response
  - Concentration of medical resources
  - High medical and surgical standards
  - Availability of sufficient personnel and facilities
  - Availability of outside assistance
  - No substantive population relocation (with the exception of the Gulf Coast)
  - Pre-crisis local or areawide planning coordination

The issue here does not center on whether or not the Federal policy should call for war related medical disaster response plans. The issue is

that if the policy does call for such planning it should not be confused with the natural disaster planning process.

B. OVERVIEW OF THE EMERGENCY MEDICAL SERVICES SYSTEMS ACT OF 1973

Recognizing that most communities in the country were seriously deficient in capability to cope with accidents and other medical emergencies the Congress passed the EMSS Act of 1973. This act essentially provides support for the development of regional systems of emergency medical care. An emergency medical services system is defined in the law as one

*" . . . which provides for the arrangement of personnel, facilities, and equipment for the effective and coordinated delivery, in an appropriate geographic area, of health care services under emergency conditions (occurring either as a result of the patient's condition or of natural disasters or similar conditions), and which is administered by a public or non-profit private entity which has the authority and the resources to provide effective administration of the system."*

The existing EMSS program, in actual operational application across the country, is a system designed to coordinate and improve the everyday emergency response of the medical resources in a specific area. This involves planning for and management of casualties resulting from airplane or train accidents down to an improved response to the single casualty situation. EMSS is involved in the everyday application of emergency medical care. It is concerned with the actual medical and surgical management of the individual casualty.

The specific 15 issue areas which each EMSS is required by law to address are:

- Provision of Manpower
- Training of Personnel
- Communications
- Transportation
- Facilities
- Critical Care Units
- Use of Public Safety Agencies

- Consumer Participation
- Accessibility to Care
- Transfer of Patients
- Coordinated Medical Recordkeeping
- Consumer Information and Education
- Review and Evaluation
- Disaster Linkage
- Mutual Aid Agreements

The EMS law includes an interpretative explanation of what specific activities are required under each of the 15 components. The next to last, Disaster Linkage, is directly related to the "Civil Defense" responsibilities of the system.

EMSS as it now exists, essentially does not deal with planning for very large scale disaster situations even though the law specifically states that each EMS shall have a plan to assure that it will be capable of providing emergency medical services in the system's service area during mass casualties, natural disasters or national emergencies.

The discrepancy between the wording of the law and the actual application of the system has resulted in a substantial misunderstanding of the large scale disaster-related response potential of EMSS organizations.

#### C. OVERVIEW OF THE HEALTH PLANNING AND RESOURCES DEVELOPMENT ACT OF 1974

While there is no intention in this legislation to provide a planning basis for Civil Defense-related health care planning, it could potentially be of related value in that it might be possible to modify the administrative structures established by this legislation to include a Civil Defense component.

The Act establishes the following:

- Requires DHEW to issue guidelines on national health planning policy.
- Establishes National Council on Health Planning and Development.

- Specifies procedures for designating Health Service Areas.
- Creates network of Health Systems Agencies (HSA's) responsible for health planning and development.
- Authorizes planning grants for HSA's.
- Authorizes DHEW to enter into agreements with State Health Planning and Development Agencies designated by the Governor of each state.
- Creates Statewide Health Coordinating Councils.
- Authorizes grants for State health planning and development.
- Authorizes grants to six States for demonstrating effectiveness of rate regulation.
- Provides technical assistance for HSA's and State agencies.
- Establishes National Health Planning Information Center.
- Authorizes at least five centers for study and development of health planning.
- Revises existing Medical Facilities Construction Program.
- Provides assistance through grants, loans and loan guarantees for projects for:
  - modernizing medical facilities,
  - building new outpatient medical facilities,
  - building new inpatient medical facilities in areas which have experienced recent rapid population growth, and
  - converting existing medical facilities for providing new health services.
- Includes grant assistance to publicly owned health facilities for construction and modernization projects for eliminating or preventing safety hazards and complying with licensure or accreditation standards.
- Authorizes grants to designated HSA's to create Area Health Services Development Funds.
- Authorizes appropriations for transition of existing planning and related programs to the new Health System Agencies established under the Act.

The core of this program is the establishment of a network of Health Systems Agencies (HSA's). The Civil Defense-related aspects of these HSA's is that their

geographic boundaries are generally governed by the availability of resources. Specifically, the law provides that:

*"HSA areas must be a geographic region appropriate for the effective planning and development of health services, determined on the basis of factors including population and the availability of resources to provide all necessary health services for residents of the area."*

- Each Standard Metropolitan Statistical Area must be entirely within the boundaries of a single health service area unless each Governor involved determines (and the Secretary approves) that in order to meet other requirements the area should include only part of the SMSA.
- Area boundaries, to the maximum extent feasible, must be appropriately coordinated with those of Professional Standards Review Organizations (PSRO's), existing regional planning areas, and State planning and administrative areas.

The HSA's themselves are required to:

- Gather and analyze data;
- Establish health systems plans (HSP's)--plans and statements of goals and long-term objectives--and annual implementation plans (AIP's);
- Provide technical and/or limited financial assistance to organizations seeking to implement the plans;
- Coordinate activities with PSRO's and appropriate planning and regulatory entities;
- Review and approve or disapprove applications for Federal funds for health care facilities within their health service area;
- Assist states in the review of capital expenditures proposed by health care facilities within their health service area;
- Assist States in making findings on the need for new institutional health services offered in the health service areas; and
- Annually recommend to States, projects for modernizing, constructing and converting health facilities in the area.

While none of the above are specifically oriented to Civil Defense considerations, it is possible that the health related Civil Defense planning process could benefit through close liaison with the various HSA groups.



### III, PROCESS

#### A. STUDY OBJECTIVE

The primary objective of this study is to identify the possible ways in which Civil Defense activities could be integrated into ongoing Emergency Medical Services Systems and Health Systems Agencies considering cost, utility and practicability.

#### B. STUDY METHODOLOGY

The study methodology consisted of three phases.

##### 1. Phase One

A Federal level advisory group, representative of the Federal Emergency Management Agency (FEMA), Emergency Medical Services Systems, (EMSS), Health Systems Agencies (HSA's), the Food and Drug Administration (FDA) and the Emergency Coordinator of the Public Health Service was convened in July and December of 1979 to provide overall guidance to the project. Partial proceedings of the first meeting are attached as Appendix A.

On the basis of the first advisory group meeting, NCSI staff developed a time-phased check list\* of potential Civil Defense-related emergency health and medical functions. The functions were separated into four time phases.

<u>Period</u>	<u>Time Span</u>
1. Pre-Crisis	Indefinite
2. Crisis Warning	14 days
3. Early Post-Crisis	30 days
4. Intermediate Post-Crisis	30-60 days

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\* Presented in Appendix B and C.

The contents of the checklist were subsequently discussed in detail with State and local personnel as outlined in the following.

2. Phase Two

The second phase of this project involved extensive discussion with State and local level personnel in three States:

Colorado  
California  
Pennsylvania

Personnel involved included representatives from the following:

- Colorado

- Division of Emergency Services
  - State EMS/State Medical Disaster Office
  - State Health Planning and Development Agency
  - DHEW-Regional HSA
  - Local HSA (Colorado Springs)
  - Local EMS (Colorado Springs)

- California

- Office of Emergency Services
  - State Medical Disaster Officer
  - State EMS Office (abolished July 1, 1979)
  - State Health Planning and Development Agency
  - State-Regional EMS
  - Local HSA - (Bay Area)
  - Local EMS - Marin County
  - Local EMS - San Francisco
  - Local EMS - Santa Clara County
  - Local EMS - San Mateo County

- Pennsylvania

- Pennsylvania Emergency Management Agency
  - State Medical Disaster Coordinator
  - Pennsylvania EMSS Council
  - Pennsylvania Health Planning and Development Agency
  - State Division of Emergency Health Services
  - State HSA
  - Local EMS (Geisinger Medical Center)
  - Local EMS (Susquehanna Valley Health Care Consortium)
  - Local EMS (Philadelphia Regional Emergency Medical Disaster Office)
  - Local Health Department (Philadelphia Department of Health)
  - Local CD (Philadelphia Fire Chief)
  - Local CD (Philadelphia County Emergency Management Agency)

On the basis of these field discussions, NCSI staff constructed the checklist responses, as presented in Appendix B, in terms of which group was perceived as having the primary responsibility for each given function. The checklist presented in Appendix C includes the same functions but in this case it represents the groups which were perceived as having a significant potential input as opposed to having primary responsibility.

It should be noted, that while only 20 responses were tabulated, the data represents the opinions of well over 20 individuals since in many cases the tabulation was the result of a group discussion. It should also be noted that all of the responses are given in terms of what could or should be the case as opposed to how the situation actually exists.

The discussion presented in Section V represents the overall interpretation of the data which appears in Appendices B and C.

### 3. Phase Three

A third aspect of the study process involved a review of the medical care annex to the FEMA Region IX San Francisco Federal Earthquake Response and Assistance Plan, 1979. In so far as appropriate the United States Sixth Army Earthquake Response Plan and the California State Medical Disaster Plan were also reviewed.

The basic purpose of this review was to examine the potential role of EMS and HSA organizations in the planning and operational aspects of emergency operations. It should be noted that throughout this report the acronyms EMS and EMSS are used synonymously.

#### IV. EMSS/HSA LINKAGE TO CIVIL DEFENSE

The essence of successful management of emergency situations is the insured integration of the overall resources of the emergency response machinery. Traditionally, the response mechanism has been disjointed and uncoordinated. Federal planning guidance originated in a number of different and often unrelated Federal agencies and offices. While the primary area of expertise in terms of dealing with a particular emergency situation would be expected to shift between Federal Agencies depending on the particular emergency situation, there is a clear need to recognize a single manager concept. This, one would assume, was the rationale for the creation of the Federal Emergency Management Agency (FEMA). Clearly, the theoretical role of FEMA is to serve as the central focal point through which the entire emergency response capability of the Federal Government is funneled. The role is fundamentally one of planning and coordination. For example, the medical response expertise of the PHS, or the scientific and health related technical expertise of the NRC or the EPA are not and should not be duplicated to any significant extent within FEMA. The capabilities within FEMA should be focused on providing the necessary skills and expertise to coordinate the resources and the responses of other Federal agencies.

The planning component of FEMA includes, in its largest sense, a wide range of research responsibilities. Perhaps the leading priority of FEMA research involves studies on the best ways to integrate the Federal emergency response machinery. Following very closely behind in research priority would be work in areas designed to improve existing technical aspects of everyday response procedures. Another major FEMA role, mostly related to operational activities but also with a significant research component involves the development of centrally coordinated Federal planning guidance on war-related emergency response activities. This guidance should cover all aspects of the potential problem situations including the whole range of health and medical issues.

Probably the overall key to the successful implementation of the FEMA role is the recognition of a basic and fundamental underlying management concept which is that to the greatest extent possible "the management of emergency situations

should be conducted by individuals whose everyday duties involve the same technical areas of expertise and operations." The emergency activities should be thought of as an extension of their routine daily activities. This extended responsibility concept is fundamentally sound but it does have a few limitations which should be noted.

Major natural disasters, even such catastrophic events as a 7.5+ earthquake in the San Francisco Bay Area, present no new or different problem areas in terms of technical management expertise. The difference of course is the magnitude. Such a quake, depending on the epicenter and the time of day, could temporarily completely overwhelm the area, but the technical capability to institute countermeasures would remain intact. Outside assistance would become available within one or two days and the problems could eventually be brought within manageable dimensions. This entire emergency response process could be viewed as an extension of routine activities.

The major example of emergency operations which involve the application of unconventional technical management expertise would be those associated with general nuclear war. This is the case because of the radiation, and the unprecedented widespread magnitude of the problem. All emergency situations short of nuclear war could theoretically be managed by the extended application of conventional techniques and procedures. Even large scale conventional war presents no different requirements. The radiation aspect of general nuclear war is, by definition, unique to that particular crisis situation and as such does not require explanation. The technical expertise required for radiation countermeasure planning and operational management during the crisis period represents skills which by and large are not exercised on a routine basis.

The second unique aspect of general nuclear war is related to the magnitude of the problem. If such a crisis occurred the resulting wide spread almost simultaneous devastation would create an operating environment which would necessitate the application of unique management procedures. In terms of health and medical operations, the situation would be like no other because the medical requirements would be enormously in excess of any realistic countermeasure capability. There would be no question of outside assistance to any specific area. All areas would be forced to cope initially with local surviving resources. The unique consequences of

this in terms of management is that unlike all other crisis situations, this might require the deliberate decision to withhold the application of medical countermeasures. This is the case because, as is generally agreed by those who have studied the problem seriously, the early application of medical countermeasures would have little impact on the ultimate survival rate but it would succeed in the near complete dissipation of all surviving medical resources within a few days. The difficult management decision, and one which would require a significant amount of prior planning to implement, would be to hold medical countermeasure services and resources in reserve to such point post attack that their application would be most cost effective in terms of the ultimate survival rate, both quantitatively and qualitatively.

The foregoing discussion is included because it highlights a major FEMA health and medical management responsibility. Planning for this type of resource conservation is outside the realm of conventional medical thought processes. It does not represent an extension of routine duties or procedures. It is foreign to the psychology of medical practice. Most important of all it is a planning function which if accomplished at all will have to be done by FEMA. As stated elsewhere, in this and prior reports, the single most important health and medical emergency management capability (in reference to General Nuclear War) is the ability to control surviving resources. This capacity will not exist without prior preparation on the part of FEMA. This is not to suggest that the actual implementation of Emergency Health Services should be under direct FEMA control. Obviously, this function should rest with the appropriate elements of the Federal and State health organizations. Existing health planning and medical care delivery organizations, however, will not seriously address the health related planning requirements associated with general war. If it is to be done, FEMA must spearhead the action. This statement is based on long term experience with the organizations involved. It should be emphasized at this point that the necessary planning aspects of resource control could be accomplished with relatively little cost, while the potential benefit regarding this area of activity is very high.

The essential objective of this study is to identify the potential linkage between Emergency Medical Services Systems and Health Systems Agencies with Civil Defense plans and operations. Before proceeding with the details of this

potential linkage it is useful to discuss the subject in general terms, recognizing that all aspects of this report are based on the following assumption:

There is a requirement for every State in the Union, as well as the United States itself, to have plans for the activation of an Emergency Health Service to respond to the medical and health needs in a variety of crisis situations. Furthermore, it is assumed that one of the crisis situations could be general nuclear war.

With the above assumption, all arguments on the probability of war or on the credibility of countermeasures can be dismissed. The study issue, therefore, becomes one of how to rather than whether to.

The concept of an Emergency Health Service Organization in anything other than the vaguest of terms disappeared from the political scene at both the Federal and the various State governments in the early 1970's. The reasons for this were many and varied and have been dealt with elsewhere. The issue now is how can States best address their current EHS requirements under existing financial and political restraints. Each State has a requirement for an emergency health service organization designed to manage crisis situations by being able to quickly mobilize resources and efficiently and effectively respond to the entire range of medical and health related emergency management decisions.

The establishment of an EHS organization should be preceded by an examination of existing departments, offices and programs to determine the potential relationship (linkage) between an emergency health service and all the programs and services which are already underway or sponsored either wholly or partly by State or local government. Some of the offices and programs which would have potential involvement include:

- The State Health Department
- The State Civil Defense Organizations
- State Medical Schools and Hospitals
- County Health Departments

- Municipal Health Departments
- County and City Hospitals
- Emergency Medical Services Systems
- Health Systems Agencies
- Red Cross
- State and County Medical Societies
- Private Hospitals and Clinics
- Private Medical Schools
- Private Practitioners

The above list of potential EHS sources of input covers the range of possibilities. It should be noted that while some of these sources obviously have more potential significance than others, they all have a capability unique to themselves, which should be integrated into the overall statewide EHS planning process. This study, however, is concerned only with the inter-relationships and possible linkage between and among

- The State Health Department
- State Civil Defense
- Emergency Medical Services Systems
- Health Systems Agencies

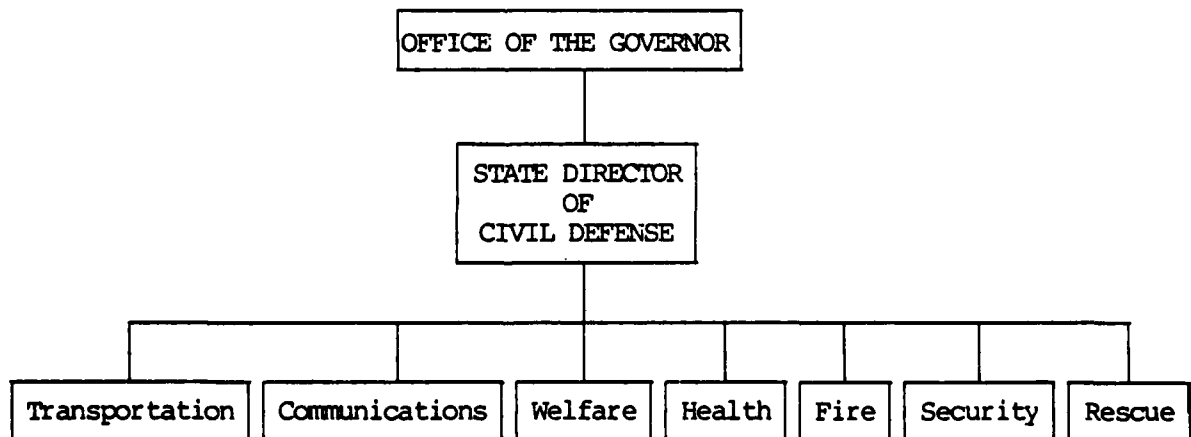
It is clear that the primary responsibility for the development of an Emergency Health Service should rest somewhere within the State Health Department. In many cases, the director of this department is given this executive responsibility by law, much the same as the Secretary of Health and Welfare has the responsibility by executive order of the President at the Federal level.

It is generally agreed that the Director of the State Health Department, acting as the delegate of the Governor, should have the primary responsibility for the establishment of an Emergency Health Services Organization. The key to the success of this mission is the capability to build on and utilize existing programs to the greatest extent possible. During the 1950's and 1960's EHS organizations at the Federal and State level were fairly strong organizational

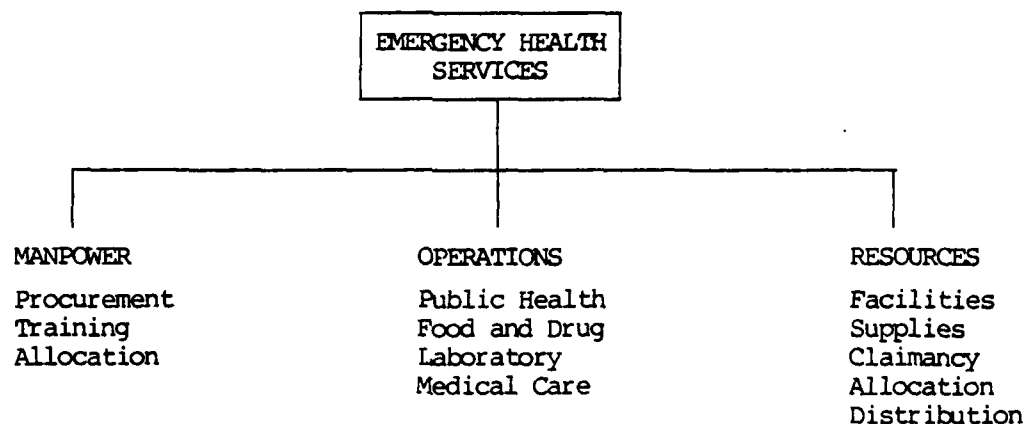


units in that rosters were kept current, exercises were held routinely, a variety of training programs were conducted on a large scale, and there was a significant amount of existing EHS related resources (i.e., Packaged Disaster Hospitals, Hospital Reserve Disaster Inventory Units and a vast quantity of medical and health resources held in Federal depots). The Federal contribution to the overall nationwide EHS effort amounted to hundreds of millions of dollars. Since funding constraints will probably preclude a return to past levels of expenditure it is incumbent upon government at all levels to make the best of what is likely to be available. This essentially means "piggy-backing" existing resources to the greatest extent possible.

In times of crisis, the emergency response of the various elements of the state government are usually under the coordination if not the direction of the State Civil Defense organization or its equivalent under a different name (i.e., Office of Emergency Services, etc.). The EHS is no exception to this generality. Therefore one can conceptualize the typical state emergency response organizational structure to be somewhat as follows:



A typical health branch of the State Civil Defense Emergency Response Organization is usually organized along the following functional lines.



The potential linkage between EMS and HSA groups with Civil Defense should be viewed in two roles: Planning and Operations. While HSA's obviously would have no operational role they theoretically could have planning input to almost all aspects of pre-crisis health preparedness planning. On the other hand, EMS organizations, in addition to a substantial amount of planning input, could have a major operational responsibility in terms of the medical care component listed under operations. The relationship between this medical care component and all the other components of the EHS system could very well be regarded as the "Disaster Linkage" which is required as one of the 15 essential elements of a Federally funded EMSS organization.

The hearings leading to, and the language of the EMSS Act of 1973 strongly suggest that the intent of the Congress was for the EMSS to assume the leading role in terms of planning for and implementing the direct medical care requirements associated with the entire range of potential disaster related crisis situations. The EMS program, however, particularly as promulgated at the central and regional Federal level, has not as yet addressed the "Disaster Linkage" component in a meaningful way. Curiously enough it appears that more emphasis

is given to the "Disaster Linkage" component at the State and especially local level, than at the Federal. This is probably due to the practical consideration that staff allocations at the local level are not as generous and county governments, when using their own funds, tend to overlap functions.

Many counties, because they receive outside support for their EMSS, tend to consolidate the planning and operational responsibilities of routine EMSS operations with disaster-related functions. It is common for one person in the county government to be responsible for the coordination of both functions. This relationship comes into better perspective after examining the opinions of State and local medical officials in terms of who or what should, "under ideal circumstances," have the primary responsibility to perform the range of Civil Defense related functions. This process was described under Section III.B., Study Methodology. As shown in Figure IV-1, the responsible agency in all four time phases was usually perceived to be the State Health Department. Figure IV-1 was developed from the basic data in Appendix B. There are 15 questions listed under the pre-crisis period. Each of the 20 respondent groups were asked to select one of the five agencies as being primarily responsible for each of the 15 issue areas. Therefore, since there were 20 tabulated responses there is a total possible maximum number of  $20 \times 15$  or 300 answers. Since some of the respondents did not have an opinion on a few of the questions there was in fact only 290 out of the 300 possible responses.

To interpret the pre-crisis period, therefore, the 49 percent of 290, or 144 of the responses for the pre-crisis section, indicated the State Health Department as being the primary responsible agency.

Figure IV-2 is constructed from the data presented in Appendix C and it represents a different process. The issue here, is not whether the agency is perceived as having the primary responsibility, but whether it is perceived as having significant potential input to the given issue area. Since each agency could be perceived as having an input into each issue area, the total number of possible responses for each agency is  $20 \times 15$  or 300. For example, if the State Health Department was perceived as having a significant input to each of the 15 issue areas by all of the 20 respondent groups (which,

FIGURE IV-1  
RESPONSIBLE AGENCY

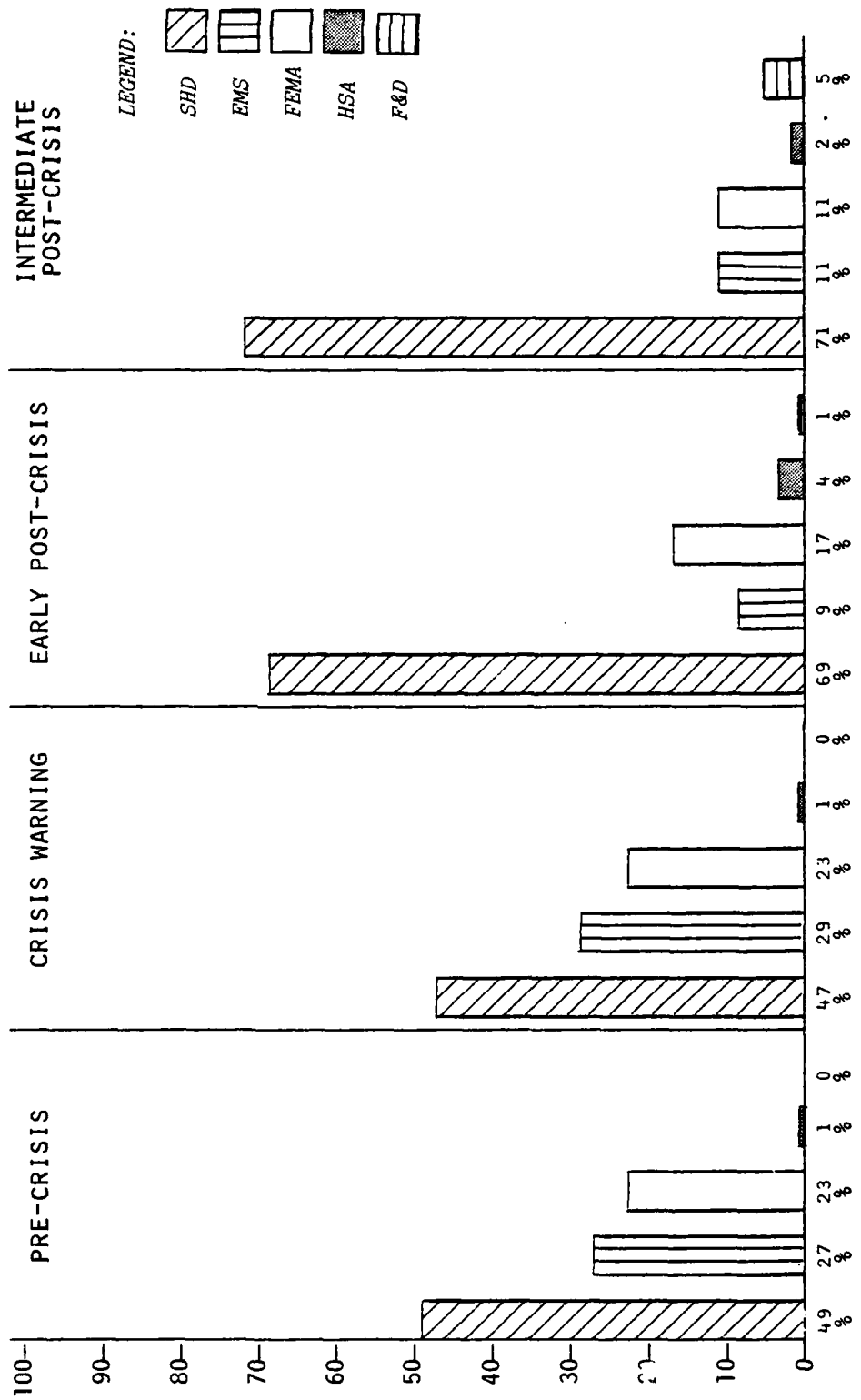
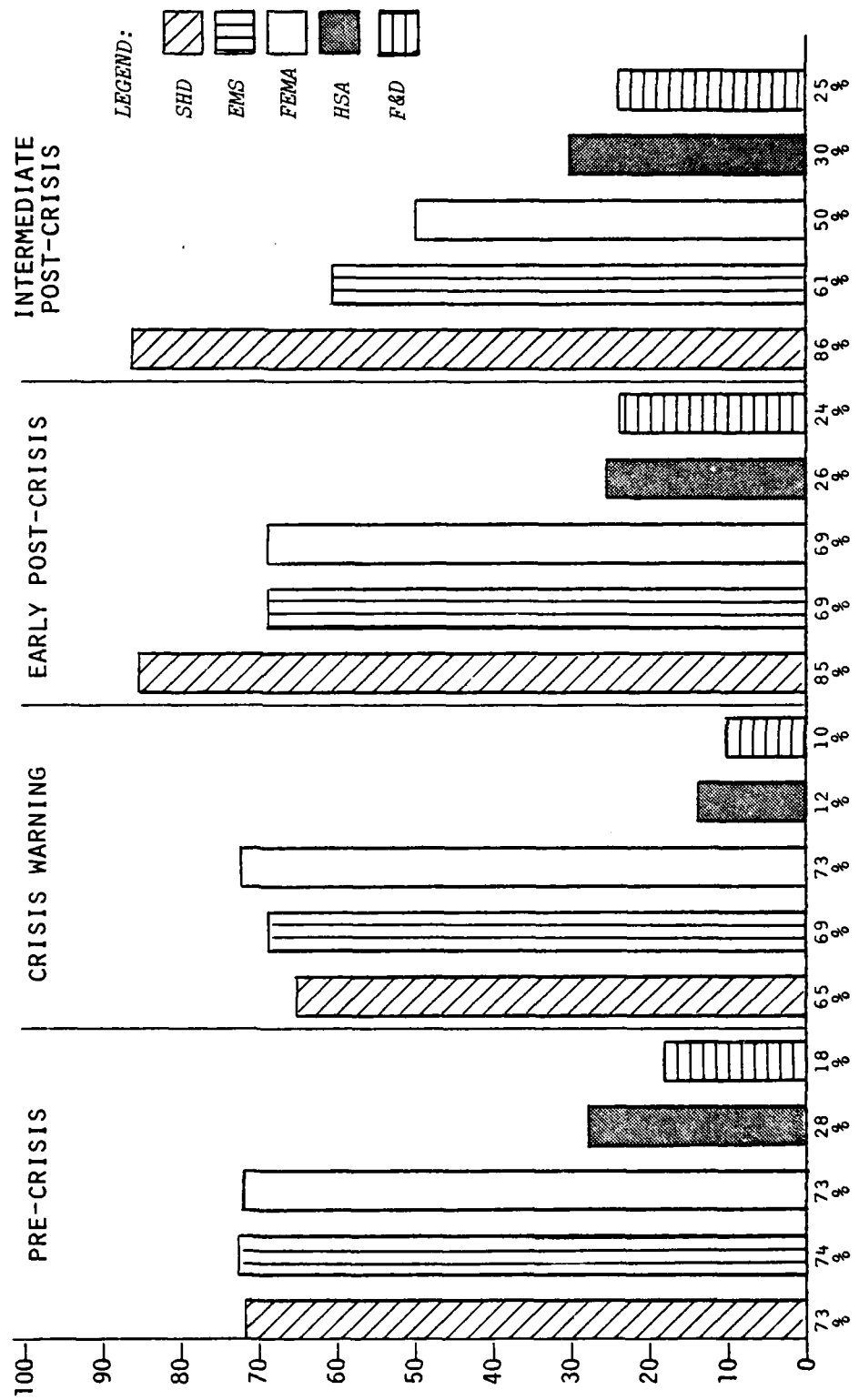


FIGURE IV-2

AGENCY INPUT



by the way, one would expect) there would be 300 affirmative responses. There were in fact, as Figure IV-2 shows, only 219 (73 percent) affirmative responses.

Comparing Figure IV-1 and IV-2 it is clear that while the State Health Department is usually perceived as having primary responsibility, other agencies, specifically EMS and CD, are perceived as having almost equal impact in terms of potential input. This is highly significant in that it is also representative of the overall tenor of opinions that our field work uncovered. Interviewees at all non-Federal levels were close to unanimous in concluding that EMS organizations should play a major role in the planning and operational response to large scale disaster situations. The reaction to and from HSA groups differed. As a generalization, HSA's were not regarded as being able to provide as much significant input to CD activities as EMS groups. While almost no one regarded HSA's as having any primary responsibility (Figure IV-1) some did perceive them (Figure IV-2) as having a significant input particularly in what might be regarded as the reconstruction period post-crisis. This actually makes sense because the data base which HSA's are supposed to maintain on a current basis has a direct bearing on the CD planning and the CD recovery process. It should be noted, however, that while HSA's are asked to maintain a substantial amount of data it appears that essentially all of it is just as readily available in the same type of regional format at the State level. It appears that HSA's have little, if any, unique data input to the Civil Defense planning process since the bulk of the Civil Defense-related data they may have, either comes from State level data banks or from the one or more EMSS organizations within the geographic boundaries of the HSA.

Each of the three States visited—Colorado, California and Pennsylvania—have a different administrative structure in terms of how EMS and HSA groups are organized. The extent to which these administrative structures are nationally representative is not specifically known but it would appear that they do cover the range of likely options as shown in Figure IV-3, IV-4 and IV-5.

The HSA structure is essentially the same across the board. The State Health Department or a specific office within the State Health Department is designated as the "Statewide Health Planning and Development Agency." In addition, the governor appoints a Statewide Health Coordinating Council from the

FIGURE IV-3

PENNSYLVANIA

GOVERNOR

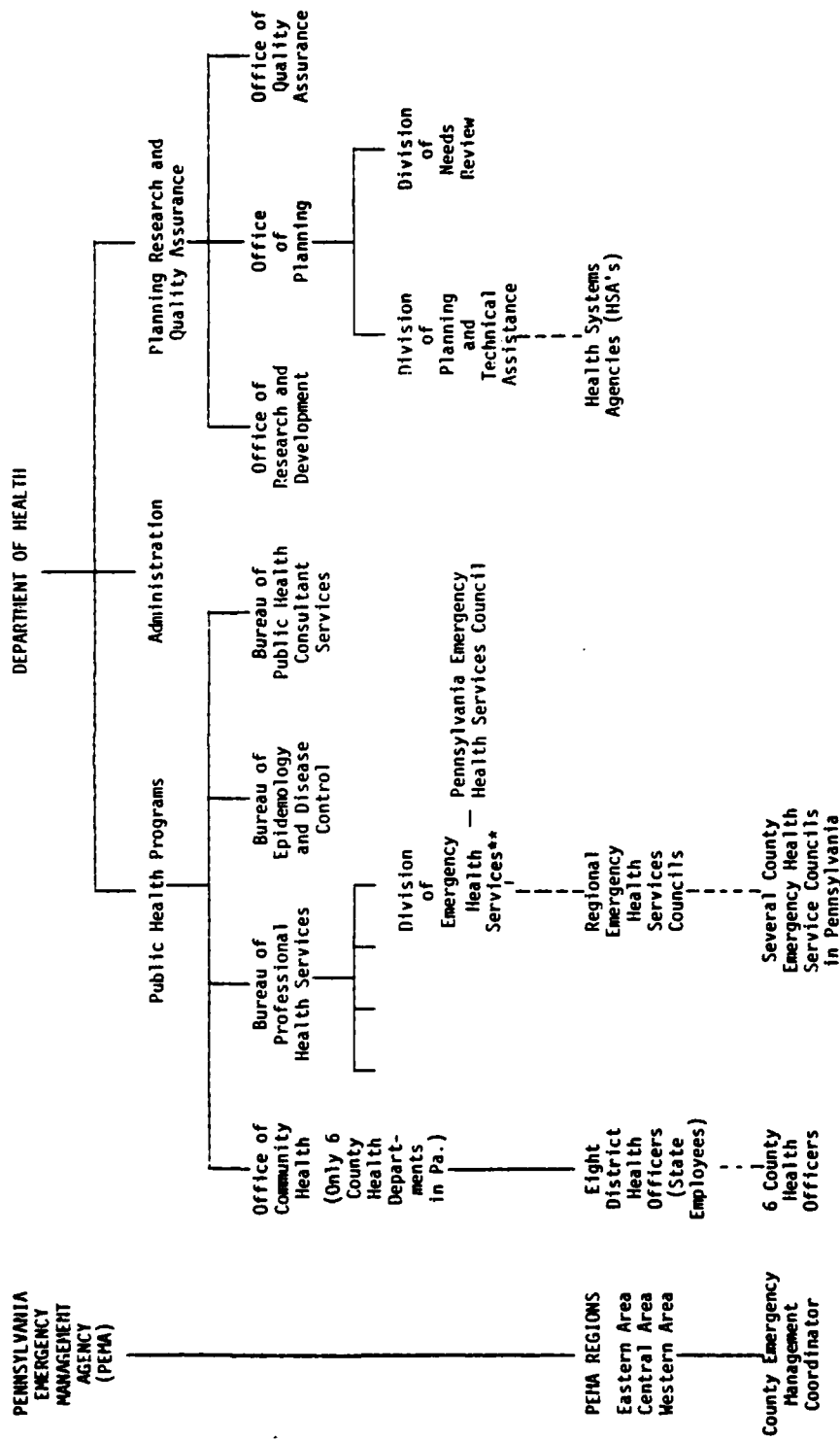
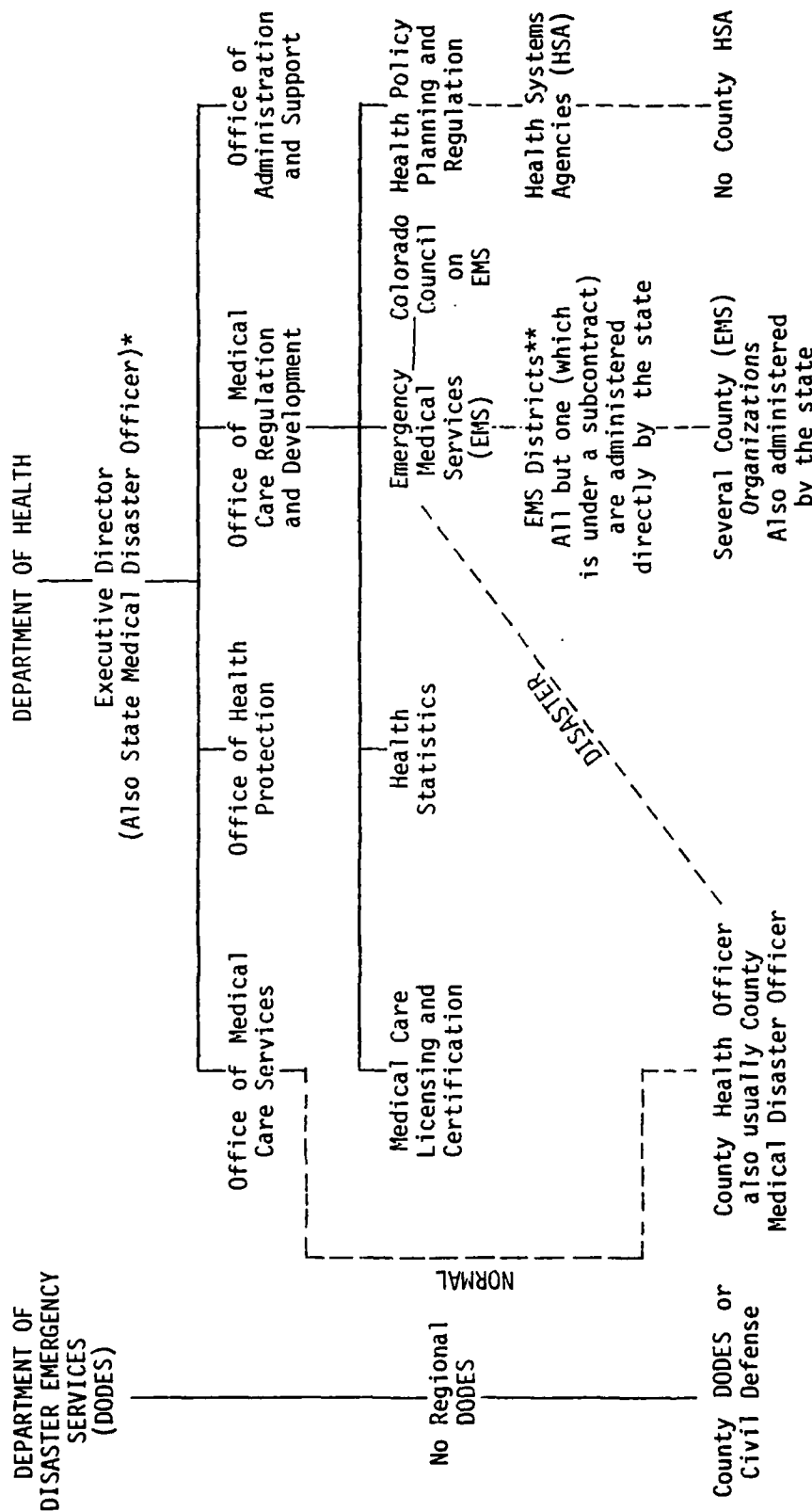


FIGURE IV-4

COLORADO

GOVERNOR



\* While the Executive Director is the official State Medical Disaster Officer, in the state of Colorado the operational aspects of disaster management are delegated to the Office of Emergency Medical Services. Colorado, therefore, is the only state of the three surveyed whose EMS Coordinator would also be the EHS Coordinator in the event of major disaster.

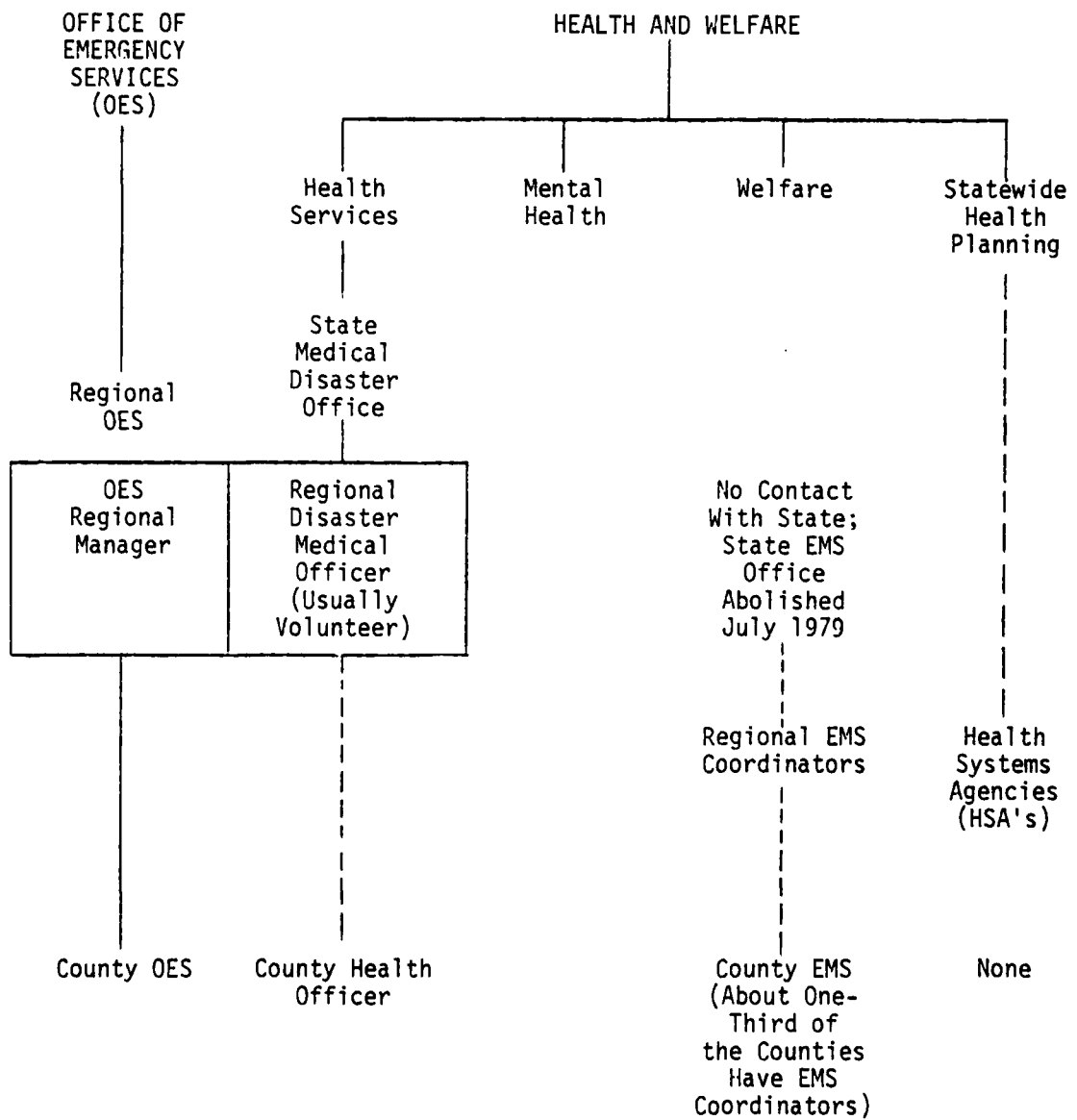
\*\* All EMS organizations in Colorado come under the purview of the State EMS which receives all the Federal funds.



FIGURE IV-5

CALIFORNIA

GOVERNOR



private sector. This council essentially sets the overall State health planning policy and the Health Planning and Development Agency carries out the policy. The HSA's themselves are funded directly by the Federal government and are usually regional subdivisions within the State comprising several counties. Theoretically the boundaries of the HSA's are drawn to encompass an existing health care delivery service area which can provide most, if not all, the necessary health care services. This is the particular reason why the HSA concept was thought to have CD application.

The HSA service area can be thought of as being internally self-sufficient in terms of health care capability. This is of substantial significance for EHS planning purposes. The geography represented by the HSA network is probably an ideal size in terms of being the basic building block of an EHS system. The major drawback of the HSA as a building block is that it has no political base. The county, aside from the State itself, is the only entity with constitutional and statutory political authority. Even the authority vested in the governments of large cities is usually statutory rather than constitutional. This is to say, it could be altered by acts of the state legislature. In terms of the reality of CD policies, therefore, the county government will remain the basic political unit. However, since HSA's represent groups of counties it should be possible to integrate these various political units into a single EHS planning area unit which would be representative of and responsible to the counties as a group. The ideal situation would be for the area currently defined as the Health System Agency HSA to also be defined as the Civil Defense Health Systems Agency (CD(HSA)). On the basis of field experience it appears that individual HSA organizations are amply staffed. It is likely that at least one of the 20 to 30 full-time staff members could be assigned the role of disaster planning coordinator. While HSA groups could theoretically assume CD related planning responsibilities at no additional cost, it is our judgment that they probably would not. The main reason why their participation is unlikely is that they have no emergency medical dimension directly within their existing structure. The emergency medical components which do exist in HSA planning documents are generated by the EMS groups in their area.

In contrast to the HSA's, the EMSS groups in the States visited are often organized at the county level. The Federal funding prerequisite calls for EMSS systems to encompass several rather than just one county, and this is generally the

case where Federal funds are involved but since there is a range of funding sources (State and local in addition to Federal), the organizational structure of EMSS organizations can vary accordingly.

All three States have at least some county level EMS organizations. Pennsylvania and Colorado each have several, whereas the remainder of the territory in these States is subdivided into regional rather than county EMS councils.\* California seems to be different in that while there is a network of regional EMS coordinators, every county has its own Health Department and health officer, and there is a very large number of counties (about one-third in the State) which have their own EMS coordinator. Because of the earthquake threat one would think that the San Francisco Bay area would have a totally integrated EMS network between the several involved counties. This is in fact not the case. Each county--Marin, San Francisco, Santa Clara, San Mateo--has their own EMS system and until very recently (Fall 1979) they made little attempt to even coordinate, much less integrate, their activities. It is our understanding that while future Federal funding will be coupled with a requirement to consolidate, the systems do operate independently as of this writing. (It should be noted that some of the counties in question no longer receive Federal funds and one of the counties never did.) Another difference in California is that as of July 1, 1979, the State level EMS office and the job of State EMS coordinator was abolished. Lack of funds due to proposition 13 is the reason given.

The range in State level EMS responsibility between these three States is interesting. California has no State office, Pennsylvania has a State coordinator without any operational involvement in any of the Pennsylvania EMS systems, and Colorado has a State EMS coordinator who essentially runs the EMS programs statewide, and furthermore is also the person to whom the State Health officer has delegated the responsibility for coordination of the medical disaster response of the State government.

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\* Pennsylvania is different from most States in that the county government is usually not strong. For example, only six Pennsylvania counties even have Health Departments. For the most part, the public health needs are met by eight regional health officers who are employees of the State.

All three States of course have a Civil Defense organization which is currently known under different names:

Colorado — Department of Disaster Emergency Services (DODES)

California — Office of Emergency Services (OES)

Pennsylvania — Pennsylvania Emergency Management Agency (PEMA)

Both Pennsylvania and California have regional as well as county counterparts to their State Civil Defense structure, but Colorado has only a county counterpart. In each case, however, it is clear that the Civil Defense organization is at least theoretically the group which is in charge of disaster operations at all levels, but particularly at the county level. This reinforces a phenomenon which has been observed throughout this study process. It is almost invariably the case that the lower one goes on the ladder of governmental hierarchy the more clearly the individual government employees perceive their own individual role in terms of their personal response to disaster situations.

The structure of the EMS program in Colorado merits a specific discussion. One of the major subjects of this study process was to determine the extent to which EMS and CD could be integrated. In terms of the practical aspects of this integration, it appears that Colorado has already accomplished the task. The State EMS coordinator in Colorado is not officially the State Medical Disaster Officer, however, he has been designated, by the Executive Director of the State Department of Health (who is the official State Medical Disaster Officer), as the lead State Health Department officer in planning for the emergency medical management of the State's response to crisis situations. This relationship is of particular significance in Colorado since all the Federal EMS funding in Colorado goes through the State, which means that the State EMS coordinator essentially has substantial control over the operations of the several EMS systems throughout the State. This relationship probably is what accounts for local EMS people in Colorado having a particularly keen sense of responsibility for the entire area of disaster medical management, rather than limiting themselves to the planning process of improved local response to routine emergency room response capability.

The situation in Colorado could be replicated in most other States without untoward complications. Since a statewide response to disaster would involve many elements of health and medical activities not directly related to the delivery of emergency medical care, it is prudent to retain organizational command and control authority in the person of the Director of the State Health Department. This will allow the full range of State resources to be mobilized and brought to bear on a given crisis situation. Nevertheless, whoever is in theoretical command, someone other than that person will be charged with the actual implementation of the emergency medical response process. In our judgment, the State EMS Coordinator is the logical person to perform this function. This responsibility would necessitate an expanded "job description" and would, of course, involve duties (particularly planning functions) which are beyond the scope of everyday EMS coordination activities. Since the job functions need to be covered by someone in the State Health Department (which is a given) the EMS Coordinator is a likely candidate. This makes more economic sense than creating a new position of disaster coordinator.

To sum up the broad relationships between Civil Defense, Emergency Medical Service Systems and Health Systems Agencies, it is our conclusion that the State medical disaster planners should consider the several HSA's within their State as being the geographic focal points around which the EMS organizations within each HSA are integrated into a truly regional and Civil Defense related emergency medical services planning and delivery program.

## V. HEALTH AND MEDICAL PLANNING FUNCTIONS

This section presents a discussion of each of the issue areas identified in Appendices B and C. Section V.A. deals with the issue areas which the majority of the persons interviewed perceived to be the primary responsibility of agencies other than the Health Department. The issue areas in Section V.B. were generally perceived to be the primary responsibility of the State Health Department or its lower level equivalent within the State. Section V.B., however, also covers the generally perceived opinions of how agencies other than the Health Department could or should have a significant input to the Civil Defense related health and medical planning process. Both Sections A and B are subdivided in the four basic time periods

PRE-CRISIS

CRISIS WARNING

EARLY POST-CRISIS

INTERMEDIATE POST-CRISIS

and each issue area is numbered in accordance with its position on the basic interview documents presented in Appendices B and C.

### A. PRIMARILY NON-HEALTH DEPARTMENT RESPONSIBILITIES

While the State Health Department is generally perceived as having the primary responsibility for the bulk of health related Civil Defense preparedness, there are several emergency preparedness areas which are often perceived as being the responsibility of organizations other than the Health Department. Some of these issues are marginal in terms of their direct relationship to Emergency Health Services and therefore it is not surprising that they are usually perceived as the primary responsibility of non-Health Department organizations. Generally they deal with communications, warning, damage assessment and inventory control. The following list represents those issue areas in which an

agency other than the Health Department is usually regarded as having primary responsibility. The list is keyed by time period and issue area number to the overall listing presented in Appendix B.

#### Pre-Crisis

4. *Designate an alternate protected site for EHS operations.*

This is generally thought to be a Civil Defense function. The usual situation during crisis operations is for representatives of all the emergency services, including health, to be co-located with the state Civil Defense Headquarters in the official State Emergency Operations Center (EOC). In addition to this, the state EHS will usually maintain an EOC of its own, which provides the necessary detailed input to the state EOC in terms of providing information to assist in the decision making process, and then to act on and provide the necessary detailed guidance to implement the decisions as they are made in the State EOC.

Most, if not all, states have established facilities within the state EOC for EHS operations. Most local EMSS groups which operate in fairly large metropolitan areas are headquartered with other metropolitan area emergency service functions (i.e., police, fire). It should be noted at this point, that the EMSS group usually consists of a small staff (sometimes only one person) whose function is to coordinate the areas existing emergency medical services. It is important to realize this relationship in terms of potential Civil Defense linkage.



### Pre-Crisis

9. *Develop capability to estimate post-crisis requirements and surviving available resources (Damage Assessment).*

This issue is of particular importance since the ability to perform the functions will have a direct and immediate impact on the emergency management process. The implication being that health personnel look to others, particularly Civil Defense, to provide them with this capability. By default, therefore, this area falls within the scope of FEMA responsibility.

Damage assessment capability has traditionally been associated with Civil Defense planning. While several of the major government agencies, particularly PHS, historically have been intimately involved in the development of damage assessment techniques all of the associated research was either directly or indirectly funded by Civil Defense. Much of the good work done in the past is now out of date due to changing weapons technology, an altered resource distribution pattern, and a significantly increased enemy capability to inflict damage. The overall perspective on damage assessment includes casualties and resources and it should be thought of in two time phases; immediate approximations followed later by more detailed estimates based on pre-established more sophisticated procedures. This capability in terms of the war situation does not currently exist in any meaningful way. Moreover, there is substantial question as to whether the damage assessment capabilities pertaining to situations short of war, are adequate. It is recognized that Civil Defense has devoted much of its past efforts to this subject, which is in itself an indication of its overall importance. The subject area is complex and does require a substantial level of effort but it is an issue which is clearly a FEMA responsibility. No other agency of government has this specific planning responsibility.

Short of general nuclear war, other crisis situations which involve a FEMA damage assessment capability are:

- Terrorist associated nuclear disaster
- Major nuclear power reactor accident
- Catastrophic earthquake situations
- Major riots
- Volcanic eruptions

### Pre-Crisis

11. *Incorporate preparedness actions into regular on-going programs.*

This area is to be interpreted as the incorporation of health preparedness actions. Both Civil Defense and Health Department personnel view this as a major EMS related responsibility.

This area represents the concept of emergency response through the extension of ordinary services. The EMS system, through the development of its disaster linkage responsibilities, could incorporate a significant level of disaster related preparedness actions into on-going programs.

The most significant single action would be the revitalization of the Medical Self Help Program. This program, as sponsored by the Federal government during the 1960's, was probably the single most effective disaster medical countermeasure program in place. Much of this type of work could be done at relatively little cost by EMS coordinating the locally available professional personnel.

### Pre-Crisis

13. *Accumulate and preposition medical stockpiles and useful surplus property.*

This is generally regarded as a civil defense function which, therefore, identifies it as an area which appropriately falls under FEMA research responsibility.

Since funding at any significant level for medical stockpiling is highly unlikely, and since access to reserve resources would be extremely important, it would appear that the FEMA research objective would be to investigate alternative approaches to insure maximum availability of surviving resources.

Local or even State level EMSS coordinators do not, in effect, control the existing medical resources. They could, however, provide very useful assistance by developing local plans to maximize the effectiveness of medical resource utilization during officially declared emergency operations. This planning guidance could be of significant benefit to the State medical disaster office in terms of providing a reasonably reliable data base to support the emergency management decisions made by the State government.

While the development of a medical stockpile as it once existed is probably financially out of the question, a lower level of effort and the stockpiling of a limited and selected group of essential items could probably be positively influenced by recommendations from HSA's and EMSS organizations.

### Crisis Warning

1. *Assure that all EHS assignees know the alerting and relocation procedures.*
2. *Confirm all alerting system telephone numbers and distribute revised alerting schedule to team members.*
4. *Transfer any additional essential operating records or reference material to EOC.*

These three areas are grouped since the overall impressions were very similar. Civil Defense is not usually considered to be directly involved, and the opinions regarding primary responsibility was about equally divided between Health Departments and EMSS groups. They are included in this section, however, since it is fairly surprising that the Health Department was not universally regarded as being responsible. It is a reflection of the substantial amount of crisis response involvement which EMS groups are perceived to have.

This area essentially involves emergency communication and emergency duty assignments. Both of these functions are currently coordinated by EMSS on a routine basis. It is an area in which EMSS could be extremely effective by extending its capability to include the disaster mobilization of the entire area-wide medical response force. This would, of necessity, need to be closely coordinated with the existing disaster plans which all accredited hospitals are required to have in place and exercise periodically. In some heavily populated areas this would involve coordinating the disaster response activities of over 100 hospitals and thousands of medical personnel.

### Crisis Warning

6. *Conduct EHS briefings and test exercises.*
7. *Inspect EHS-EOC and prepositioned supplies and equipment.*

The perception of responsibility for these two areas essentially ranged across the board with no agency clearly being regarded as primarily responsible. It is clear, however, that if EMS groups were to assume more Civil Defense related planning activity, they would surely play a significant, if not major, role in the conduct of test exercises.

They currently conduct such exercises on a routine basis and sometimes on a fairly large scale. The experience of such groups would provide valuable input to such massive disaster drills as a test exercise of the 6th Army San Francisco Bay Area Earthquake Response Plan. An exercise of this plan, for example, could involve the participation of several different EMS organizations with the obvious benefit of increasing areawide EMS coordination.

Direct observation over the last several years definitely indicates that many EMSS organizations have done an extremely effective job of increasing emergency response capability. Test exercise, as well as the response to actual emergencies, have shown the EMSS concept to have been a good idea. While stipulating as to the efficacy of the program, it must also be emphasized that none of the systems have exercised at a level which would even approach the response requirements associated with a major disaster.

State level disaster planners should be encouraged to actively seek the participation of EMSS groups in all their disaster exercises.

### Early Post Crisis

10. *Arrange for the inter-community movement of patients, supplies, wholesale and retail stocks, and supporting materials.*

This is another area in which Civil Defense is regarded as having a major role and therefore represents a subject area which clearly falls within the research responsibility of FEMA. While Civil Defense is regarded as the actual implementing organization, it is clear that EMSS groups and Health Departments would need to provide detailed recommendations. Since this process would likely involve a substantial level of inter-county movement, the disaster office at the State level would probably assume the command and control function.

The Early Post Crisis movement of resources could not be done efficiently without having pre-crisis capability to identify the location of the resources, and the post-crisis capability to estimate the damage sustained.

#### Intermediate Post Crisis

6. *Establish standards and provide technical information and advice on the salvage, processing, distribution and storage of food and drugs; assist in determining priorities for restoration of facilities.*

This area is essentially regarded as the responsibility of the Food and Drug organizations. Since in most (but not all) State the Food and Drug organization is part of the Health Department per se the interpretation of primary responsibility is vague. The clear point, however, is that these responsibilities would not be attributed to EMS or Civil Defense organizations. It should be noted, however, that this area involves responsibility for establishing standards and providing technical information not the responsibility for actually carrying out the task. The actual implementation of the salvage, distribution and restoration activities would largely fall to Civil Defense as it coordinates the overall emergency management process.

Much of the technical advice in this area would probably be generated at the Federal level. Food and Drug Administration and the EMS linkage would be limited to keeping informed and acting on the policies established at the State or Federal level.

B. PRIMARILY HEALTH DEPARTMENT RESPONSIBILITIES

The foregoing section presented those issue areas under consideration which were generally perceived to be the primary responsibility of an agency other than the Health Department.

This section deals with all the remaining issue areas and a brief discussion is presented for each. While the areas in this section are all generally regarded as primary Health Department responsibilities, the discussion for each will include an overview of the range and extent to which other groups are perceived as being able to provide significant input.



## PRE-CRISIS

1. *Designate a single official as responsible for overall direction and coordination of emergency health services and resources.*

In every state it is clear that aside from the Governor who is ultimately the Chief Executive of all State functions, the chief of the State Health Department is the individual who would be in charge of all things health and medical in terms of crisis related emergency health services. Recognizing that the ultimate medical authority would be the chief of the State Health Department, many State Health Departments have appointed a Medical Disaster Officer to whom the chief of the department delegates the role of emergency planning and operations. It is clear that the Disaster Officer should be someone with a broad knowledge of the health related resources of the state (public and private). On the surface, one might assume that the State Medical Disaster Officer should be in fact the same person who also has the responsibility for the statewide coordination of the Emergency Medical Services Systems. Theoretically, one person filling both job functions would be the preferred option. In practical application, however, given the existing organizational priorities, the two job functions should be separate at the State level, because the EMS Coordinators are usually fairly junior individuals who have not had sufficient time to establish themselves with the State medical community and because often they are not medical doctors.

The second preferred option would be for the EMS Coordinator to serve on the staff of the Medical Disaster Officer as the individual in operational charge of the EMS component of the State EHS organization. This relationship would greatly facilitate the capacity of the state to respond to medical crisis situations. It is extremely important that this staff relationship is active under routine non-crisis situations. The two individuals should in fact be co-located and, to the greatest extent possible, they should be in very close routine physical contact with the appropriate staff within the State Civil Defense organization.

While paper plans and agreed upon assignments are obviously of value, they cannot substitute for regular face-to-face contact in terms of the ultimate operational efficiency of emergency medical operations.

The State EMS Coordinator should be intimately involved in the development of the statewide medical disaster plan. As evident as this may seem, there are states in which it is not the case.

The discussion on this issue thus far has applied to the State level of government. Lower levels, both regional and/or county could operate slightly differently. In both of these situations, the EMS Coordinator could assume a direct role. However, lower levels, both regional and/or county could operate essentially in the same manner.

The general consensus is that even if EMS is not directly involved, it, along with the State Civil Defense personnel, should have a major input to the selection of the Medical Disaster Officer.

### Pre-Crisis

2. *Give emergency assignments to key personnel, keeping rosters current.*

Selecting specific individuals or job positions to fill the State EHS plan emergency assignment roster, is a task which should be discharged by the State Medical Disaster Officer but only after close liaison with the EMS and CD people. The largest single factor of importance in this process is to insure that the EHS system does not become people dependent. A major source of potential problems noticed in this study effort was that in almost all cases the individuals interviewed stressed that if it were not for a special relationship between persons X and Y the system would be in serious trouble. This cannot be avoided completely, but every effort should be made to insure that the emergency organization is as people independent as possible.

Another factor of importance is that the personnel selected for EHS key roles must be people who are already under the administrative umbrella of the State. They could be direct employees of the State Health Department, or medical personnel associated with State operated medical schools and hospitals. If other than State employees are selected, the Medical Disaster Officer must be confident of their active participation in crisis operations.

The emergency assignment roster should be reviewed every six months at which time all designated participants should receive all the information pertinent to their responsibilities.

### Pre-Crisis

3. *Establish an emergency health services alerting system.*

The EHS alerting system is the responsibility of the Medical Disaster Officer, but it is clear that the resources of the state CD and EMS organizations need to be fully employed. One of the corner stones of an effective EMS organization is its communications network with all its know-how and existing equipment as well as its tie-ins to other emergency communications networks. This system, coupled with the resources of the State CD organizations, should prove to be sufficient. A standard telephone call down system needs to be instituted to support existing radio networks.

In terms of any given EMSS organization, the emergency medical alerting system is already in place. The additional personnel who would be needed to fully staff an operational emergency health services organization could be added to the existing systems with little effort.

### Pre-Crisis

6. *Determine essential operating records and reference materials (laws, regulations, policies, etc.) and preposition them at EHS Emergency Operating Center.*

Both EMS and CD are viewed as having significant input to this area-- Civil Defense for the obvious reason of providing guidance as to policy and the laws and regulations which govern the policy. EMS on the other hand could be intimately involved in the process of identifying the medical resource data on supplies, facilities, equipment and personnel as they all relate to emergency medical operations. The most significant data to be prepositioned would be the location and inventory level of medical resources. The bulk of this activity would be at the State level rather than at the local level.

A point of some significance is that while States do maintain a considerable body of health and medical data on manpower, facilities, etc., the information pertaining to supplies is very limited. Moreover, the data which is available is usually not physically co-located. There usually is no one place where all the pertinent EHS related data can be found.

It is obviously, therefore, very important for State EHS planners to develop detailed lists of data requirements and to establish procedures by which the necessary information can be collected and prepositioned within hours.

### Pre-Crisis

7. *Provide periodic training and orientation in disaster practices and emergency duties of assignees.*

Again, CD and EMS are closely linked in support of the State EHS organization. Both CD and EMS groups have had significant background experience in this area. Their cooperation in such training exercises not only upgrades the overall response capability but also improves the capacity (particularly EMS) to respond to routine emergency situations and to major peacetime medical crisis situations (i.e., earthquakes, major accidents, etc.).

All EMSS organizations conduct emergency exercises routinely. Some of the larger and more sophisticated groups conduct large scale emergency drills involving hundreds of persons. This is an area in which existing EMS systems could provide substantial Civil Defense related assistance to State and local authorities. State level and State regional level disaster exercises should include the active participation of EMSS groups and vice versa, EMSS generated exercises should be expanded and encouraged to include the broader aspects of the medical disaster management.

### Pre-Crisis

8. *Maintain basic data on the location of health manpower, health care and health support facilities and on inventories of selected health supplies and equipment.*

This is one of the few issue areas in which HSA's were perceived as being linked to the Civil Defense system. Even here, however, EMSS groups were generally thought as having an even stronger input. It should be noted that the second part dealing with inventories or supplies and equipment was generally regarded as a void area, in that this data, in any comprehensive sense, does not exist. It is in fact regarded as the major gap in Civil Defense related health planning.

Even though most of this information is collected and maintained at the State level, EMSS and HSA's could provide substantial additional information particularly in reference to the level of inventory and the location of selected supplies and equipment.

### Pre-Crisis

10. *Provide guidance and consultation to assist regional, county, city or other local Health Departments and governments in developing and maintaining an effective emergency health services capability.*

Clearly, any organization associated with health operations could have an impact in this area but overall it is primarily the responsibility of the State Health Department. The lack of this sort of guidance from State to local authorities and perhaps even more importantly from Federal to State governments represents a major gap in terms of the nation's overall preparedness to cope with major crisis situations. As of this writing there is essentially no guidance being offered by any level of government. In our judgment, this area represents a productive FEMA research area. Far more than the mechanics of emergency medical operations are involved. The major issues to be addressed are resource management and public policy.

By definition, only government can establish public policy. In the Civil Defense health and medical area this is historically translated into a series of federally generated documents designed to provide relatively detailed planning guidance to State and local officials. If the Federal government were to reinstitute this procedure, the EMSS linkage at the Federal level could be significant. It would provide the much needed impetus to encourage EMSS organizations throughout the country to give more serious consideration to their disaster linkage responsibilities.



### Pre-Crisis

12. *Develop and prepare for issuance action documents imposing controls and provide guidance to communities concerning direction of emergency health service programs under various crisis contingencies.*

This area, as the preceding one, involves official public policy. Action documents, covering the range of possible contingencies, need to be prepared in advance. Every State should be prepared at any given moment to implement emergency control and distribution procedures over all the health and medical resources in the State. Furthermore, the official State policy regarding the time phased application of resources under different types of emergency situations needs to be established in advance, at least in general terms. Both EMS and HSA organizations could provide substantial assistance to the State Health Department in the development of this policy. Participation of EMSS at the National level, as in the prior issue area, would have a substantial positive impact on the process itself as well as on the psychology of local disaster oriented planning.

#### Pre-Crisis

14. *Develop a program of preparing the individual to take care of himself and possibly others when there may be no professional medical assistance available (Red Cross, First Aid, CPR, Medical Self-Help).*

If the government decided to reinstate the concept of Medical Self-Help as it was successfully pursued in the late sixties, EMS groups would be the ideal vehicle to use. The existing in place structure of the EMS organization, with financial assistance through Civil Defense sources, could provide a significant contribution. In fact, this area could be regarded as one of the strongest potential links between EMS and CD. The Medical Self-Help program has traditionally been thought of as the most effective medical Civil Defense project ever sponsored by the Federal government. So much so that even when Federal funding disappeared in the early 1970's many States and some localities continued the program. The major reason for this is that the program has major applications even in peacetime.

#### Pre-Crisis

15. *Maintain active working relationship with existing state agencies and professional groups; negotiate agreements where applicable and exchange informational materials and plans (American Association of Blood Banks, Red Cross, Medical Societies, neighboring states, etc.)*

This area appropriately falls almost exclusively under the State Health Department. Neither EMS or HSA would be expected to have a significant input.

### Crisis Warning

3. *Restrict travel and leave of EHS assignees.*
5. *Require EHS assignees to review State EHS plan and emergency action documents and modify as necessary.*
8. *Relocate EHS assignees to (1) State EOC or (2) EHS-EOC as directed.*

All of these areas represent the actual implementation of public policy and in this sense they fall under the purview of the State Health Department. While the actual promulgation does not have an EMS linkage, the preplanning that would be required could be positively influenced by EMS input.

### Crisis Warning

9. *Coordinate the mobilization of health professionals.*

EMS groups could have a major impact in this area. In fact, if by prior planning the EMS organization assumed the actual medical care responsibilities for crisis operations, this function could be regarded as the major responsibility of EMS, at least in terms of private as opposed to (public) health professionals. Since EMS as it operates routinely is in fact emergency medical operations, its potential capacity to quickly engage the entire medical resources of an area more effectively than any other existing entity represents a strong potential linkage to CD operations.

### Early Post-Crisis

1. *Assume direct operational control over emergency health service functions anywhere within the State in the event of disaster beyond local control.*

The EMS linkage here is evident. The EMS system could be the vehicle through which the State implements the direct medical care functions of its Emergency Health Service. EMS also could provide useful assistance to State authorities in the extensive pre-crisis planning which would be necessary if the State were to be able to assume direct operational control effectively.

### Early Post-Crisis

2. *Maintain vital statistics, casualty and health situation reports.*
3. *Assess requirements and determine location and numbers of surviving health manpower.*
4. *Assess damage to and losses of health facilities (e.g., hospitals, nursing homes, clinics, blood banks).*
5. *Assess damage to and losses of health end-item inventories at wholesalers, retailers, hospitals, etc.*
6. *Prepare time-phased estimates of requirements for essential health survival items, health materiel resources and supporting goods and services.*

EMS could have a major input in all of the above areas. While the above functions do not directly involve the delivery of medical care, they all, of course, impact on such care. The operating EMS organization could provide the EHS with information in all the areas, but probably areas 3 and 6 (the assessment of requirements in terms of casualty management) would be of greatest significance. The EMS organization would be the best equipped group to quickly estimate the medical care requirements in the given situation, and to develop a reasonably accurate time phased estimate of continuing requirements.

The EMSS involvement in damage assessment in terms of facilities and supplies could also be substantial, but neither this nor casualty prediction could be dealt with adequately without prior planning. The entire issue area of damage assessment is perhaps more significant than it would at first appear. If substantially incorrect estimates (in either direction) are forwarded to higher levels of command and control, the emergency management decisions made at the State level regarding resource allocation and medical care delivery priorities, could well have adverse effects on the overall survival rate.

#### Early Post-Crisis

7. *Determine surpluses and deficiencies of health resources by geographic area.*

This is an area in which a significant HSA linkage could exist. If HSA's were given a reasonably accurate assessment of the damage they would be in a better position than any other group to estimate the surviving surpluses and deficiencies within the HSA. EMS linkage would also exist by providing an operational interpretation (definition in terms of the type of crisis) as to what constitutes a surplus or a deficiency. Here again, however, pre-crisis planning would be required.

#### Early Post-Crisis

8. *Assess health supplies and equipment distribution capabilities.*

This is an area which is primarily Health Department/CD oriented. Neither EMS or HSA would be expected to have a significant input into the mechanics of distribution.

### Early Post-Crisis

9. *Requisition health facilities, claim and allocate supplies and equipment and assign available health manpower.*
11. *Execute emergency action documents, i.e., suspension of private medical practice; cancellation of elective surgery, use of alternate bed sources, etc.*

The EMS linkage in these two areas would be to the extent that it is acting as the officially designated direct medical care delivery component of the Emergency Health Service. The implementation of both areas 9 and 11 would obviously require an emergency order issued by the governor personally. The pre-crisis role of EMS would be to provide state authorities with a range of guidelines to assist the governor in his emergency decision process.

Federal level EMSS could provide significant input to the federally developed planning guidance covering the discharge of non-critical hospital patients, suspension of elective procedures, triage standards and the institution of extremely austere medical practice procedures.

### Early Post-Crisis

12. *Assume operational direction over the delivery of medical care.*

This area is very similar to Early Post-Crisis area 1, above. The difference is that 1, above, is interpreted as assuming operational control in the sense of overall authority. This area 12 refers to the hand-on direction of the actual delivery. This area represents the strongest potential EMS/CD linkage. The local EMS with modifications in its current organizational structure could perform this function. The major modification would be the emergency temporary appointment of a qualified surgeon to act as EMS director with all the necessary emergency powers to enforce decisions on all the medical care resources in the area, both public and private.

While many individuals interviewed had major reservations about EMSS assuming the overall health-medical civil defense related responsibility, most did view EMSS as the logical organizational structure to plan and implement the emergency medical care component of Civil Defense operations.



#### Intermediate Post-Crisis

1. *Provide state CD and resource management offices with technical advice and information related to provision of emergency health services.*

This area also represents a major potential EMS linkage. While the overall EHS responsibility goes beyond actual medical care delivery, EMS could provide the primary source of input regarding medical care requirements. This input would cover advice as to actual current requirements, as well as how best to apply the available resources to insure the best possible continuing capability to cope with the situation.

While EMSS has an advisory linkage in this issue area, the State Health Department would be the actual organization charged with advising the State government.

#### Intermediate Post-Crisis

2. *Determine administrative and operational priorities as dictated by conditions reported through liaison with Federal agencies and other State agencies.*

In terms of actual medical care the EMS link here is to provide cost benefit recommendations. This is to say, given the facts on available resources, EMS recommendations on the allocation of the remaining resources as far as direct medical care is concerned, would be of significant value. The recommendations made by EMS would be weighed against the longer term requirements identified by other elements of the overall EHS system. This balanced approach would be essential in order to issue the maximum degree of overall effectiveness.

### Intermediate Post-Crisis

3. *Determine total health requirements and conduct programs to meet State-wide needs for individual medical services, community health services, laboratory services, etc.*

This area is essentially beyond the scope and responsibility of EMSS. The State EHS organization is the only unit which could address the problem, keeping in mind that the objective would be to balance the allocation of resources to insure the most effective long-term utilization. This area is a good example of essential emergency health services which are not directly involved in actual medical care.

### Intermediate Post-Crisis

4. *Provide for support of available surgical and medical services (justify claims for transportation, fuel, water, etc.).*

The EMS linkage here would be the provision of technical advice as to the existing support requirements. Additional input could involve an assessment of which available services should receive priority allocation of the surviving support resources.

#### Intermediate Post-Crisis

5. *Gather, analyze and distribute epidemiological intelligence related to emergency public health situation; advise on control of communicable diseases.*
7. *Establish standards and provide consultation and assistance in operation of blood banks and laboratories.*

These two areas are essentially outside the scope of EMS. The EMS linkage even in terms of recommendations is marginal. They are, however, both important and clearly fall under the responsibility of the State EHS organizations.

#### Intermediate Post-Crisis

8. *Provide guidance and leadership to communities in the equitable distribution and effective utilization of health manpower; maintain working relationship with State emergency manpower agencies.*
9. *Interpret intelligence information to determine areas of critical health manpower shortages and nearest available resources; prepare claims to Federal authority for additional health manpower to meet State health needs.*
10. *Determine most effective intrastate utilization of manpower to meet civilian health needs, develop and coordinate training programs to meet evolving health needs.*

The above three issue areas all deal with manpower requisitions and utilization. EMS certainly would have a linkage in that its own claim on health manpower would need to be considered. HSA linkage involves the provision of advice as to the availability of resources, especially in area 9. The operational role, however, in these areas rests clearly with the State Health Department.

#### Intermediate Post-Crisis

11. *Analyze crisis damage to health supplies and equipment and health facilities; periodically reassess their availability within State and adjust as necessary.*

This area represents a significant potential HSA/CD linkage. Clearly, HSA groups would be able to provide valuable post-crisis assistance in the area of damage analysis to the overall health care capability of the area. Furthermore, they would have special capabilities in determining the health/medical reconstruction requirements and priorities in the post-crisis period.

EMSS linkage would be marginal. At this point in time the bulk of the emergency medical care activities would probably be over. This issue area involves some of the necessary input into the process of re-establishing the medical care system. Since HSA groups are very familiar with the pre-crisis medical care requirements they ought to have a significant input into the process of rebuilding a medical care delivery system.

#### Intermediate Post-Crisis

12. *Receive and act on local government claims for health and supporting materiel resources.*
13. *Determine most effective and efficient intrastate utilization of health materiel resources to meet civilian health needs. Recommend improvisations to compensate for supply shortages and furnish guidance to communities on improvisation and restoration of health facilities.*

The EMS/HSA linkage to these areas is essentially one of providing the State with the needed recommendations. The State allocation decisions would be influenced substantially by the local requirements as viewed by EMS/HSA assessment of need.

## VI. DISASTER MEDICAL PLANNING IN THE SAN FRANCISCO BAY AREA

One of the task areas to be addressed under this work effort was to examine the California San Francisco Bay Area Medical Disaster Plan to determine the actual or potential linkages it might have with existing Emergency Medical Services Systems. This task turned out to be more complicated than anticipated.

The branch of the California government which is responsible for emergency management is called the Office of Emergency Services (OES). The State is subdivided into several OES regions. Region 2 consists of the nine counties in the San Francisco Bay Area:

Alameda	San Mateo
Contra Costa	Santa Clara
Marin	Solano
Napa	Sonoma
San Francisco	

There are at least five different medical disaster response plans which impact on each of these nine counties:

1. Each County Plan
2. The 6th U.S. Army Earthquake Response Plan
3. The San Francisco Federal Earthquake Response and Assistance Plan, FEMA Region IX, 1979
4. The State of California, Office of Emergency Services, Region 2, Disaster Medical Procedures
5. Disaster Response Plan, California Department of Health Services (Draft)

All the plans, especially those above the county level, are very closely interrelated. The 6th Army Plan of course deals with the mobilization and application of DOD resources located in several States. The California State

Plans outline the overall State policy in terms of emergency management. The San Francisco Federal Earthquake Response (FEMA Region IX) Plan is a comprehensive document which covers all aspects of crisis management. The FEMA plan provides a detailed description of the responsibilities of the Federal agencies which would be involved. The plan vests the coordination of all Federal resources in terms of emergency medical services (Casualty Care) in the Commanding General of the 6th U.S. Army. The 6th U.S. Army Plan, in turn, outlines the Federal medical response as designed to support the medical operations of the California Office of Emergency Services.

A point of major significance, and an indication of the extent to which the United States Public Health Service has deemphasized Emergency Health Services activities, is the fact that DHEW/PHS is not included as a Federal Agency with emergency medical care functions. However, the USPHS hospital in San Francisco is included as a component of the Federal medical resources under 6th U.S. Army coordination. The only medical care related function specifically assigned to DHEW involves the emergency distribution of medicine. The function is defined as follows: Coordinate the procurement and distribution of emergency medical supplies needed in support Emergency Medical Care Function; determine the availability and suitability of medication stocks within and near the disaster area; and inspect food stocks and food processors in the disaster area to restrict distribution of contaminated food products to consumers.

While it is reasonable to assign overall coordination of the Federal medical response process to the 6th Army, one would expect that the USPHS would have been given a more significant role particularly in reference to its potential capacity to mobilize health care resources on a national scale.

The potential operating situations in the event of a major earthquake in the Bay Area, and the basic assumptions and the general concept of operations for the several plans pertaining to the San Francisco Bay Area, are included in Appendix D as background information. As one would expect, the EMSS linkage is strongest in the county plan. The county plan essentially considers the emergency medical response to an earthquake situation to be an extension of the normal daily functions of the existing county Emergency Medical Services System. The concept of

operations focuses on coordinating activities between facilities rather than directing the internal procedures. The plan, of course, recognizes that the problems would be far in excess of the local capabilities.

Since each of the separate existing EMSS's in the Bay Area all have sufficient resources within their own areas of operation to cope with any conceivable disaster (short of a major earthquake) there has been no recognized requirement for them to work closely together. This has in fact been the case.

There has been very little inter-EMSS coordination throughout the Bay Area. Considering the potential earthquake threat, it is surprising that coordinated planning has not taken place. From what could be determined, even the disaster drills conducted to date have not been adequately coordinated. Individual counties planned and executed disaster drills internally. The 6th Army has periodically exercised its plan but without area-wide coordination. The Army exercises have essentially been internal also. It was our understanding that a full scale area-wide disaster exercise, scheduled for the Spring of 1980, was to be a joint exercise between the State, FEMA Region IX, the 6th U.S. Army, and the several affected counties. This in fact was not the case. The exercise was limited to State and San Francisco county participation. It would be extremely useful for all interested groups to participate in an area-wide drill, linking the EMSS organizations and other medical disaster personnel in all the surrounding counties as well as FEMA and the 6th U.S. Army. The most significant benefit to be derived from EMSS participation is that the process will tend to foster subsequent coordinated planning and continuing EMSS involvement in the overall process of upgrading the disaster linkage capabilities.

It is of interest to note that the Bay Area probably represents an ideal area of the country for existing EMSS's to develop and exercise a full scale test of the entire concept of disaster linkage. Since this area is well covered in terms of FEMA, Army and State level disaster plans, the development of a coordinated inter-EMSS disaster linkage concept of operations could be effectively integrated into the overall planning process. When the EMSS planning process at the National level begins to focus more attention on its overall disaster linkage components, the Bay Area would be a good location to serve as a test site in terms of the development of a disaster linkage concept prototype that could be

applied, with scaled-down modifications, to other areas of the country. San Francisco is an ideal planning area because it is one of the few, if not the only one, in which medical disaster planners are routinely faced with the distinct likelihood of having to cope with a massive disaster on a potentially unprecedented scale.

The EMSS disaster linkage role in the Bay Area would be clearly subordinate to existing higher level plans which might be all the more reason for EMSS participants to become completely familiar with the larger planning process. During the inevitable period of confusion after a major quake, it would be crucial for the automatic responses of the existing EMSS structures to be compatible with each other as well as with the operational doctrine as outlined in higher level plans. One of the very strong points inherent in EMSS concept is that, theoretically, the emergency response process is automatic. That is to say, all the participating personnel are aware of their roles as well as the operational protocol in response to a range of crisis response situations. This level of awareness has been tested any number of times either in exercises or in actual crisis response situations in various parts of the country. Generally speaking the system works well. The disaster linkage components of EMSS organizations could be developed under similar automatic response criteria. Since, by definition, disaster situations would involve less predictable response requirements, the operational response process could not be expected to be as automatic as it would be for the routine emergency. Nevertheless, the broad aspects of disaster crisis response could be preplanned with particular importance given to the emergency management of available resources. An additional function of the disaster linkage planning process and one which existing EMSS organizations have the inherent capability to perform perhaps better than any other group is the development and maintenance of an area wide emergency medical duty assignment roster.



## VII. CONCLUSIONS AND RECOMMENDATIONS

This section is divided into two parts, the first being those conclusions and recommendations specifically related to the subject of this study, and the second being those associated with broader aspects of Civil Defense health and medical related issues which were incidentally identified in the process of the field experience associated with this project.

### A. ISSUES SPECIFICALLY RELATED TO THE SUBJECT OF THIS STUDY

#### Conclusion:

- The primary responsibility for planning and implementing a Civil Defense-related Emergency Health Service Organization should remain with the State Health Department. (Section IV)
- Health Systems Agencies theoretically could assume, at little or no additional cost, a significant Civil Defense-related role in the Emergency Health Service planning process but in practical terms their participation cannot be anticipated because, unlike EMS systems, the HSA's have no existing "emergency response" orientations. (Sections IV and V)
- Emergency Medical Services Systems have been very successful in upgrading local response to individual emergency medical situations but they have not adequately addressed their disaster linkage responsibilities. (Sections IV and VI)
- Emergency Medical Services Systems could assume the primary role of acting as the emergency medical care component of the Emergency Health Services organization in mass disaster situations but implementation of this planning and operational responsibility would require additional staff of at least one in small States and up to perhaps three in the larger States. (Sections IV and V)

#### Recommendations:

It is recommended that FEMA:

- Encourage the EMSS structure at the Federal level to increase the priority of its mass disaster planning activities.
- Consider a prototype project to augment the funding of a few selected EMSS groups to test the extent to which the increased funds could upgrade their mass disaster response capability.

B. ISSUES NOT SPECIFICALLY RELATED TO THE SUBJECT OF THIS STUDY

Conclusions (Based on personal observations not necessarily addressed in the body of this report)

- Relative to the national posture of ten years ago, there is a serious widespread lack of interest and activity in planning for the emergency medical response to mass disaster situations.
- Many people not directly associated with EMSS organizations hold the misconception that EMSS groups are adequately addressing the medical problems associated with mass disaster.
- The reduced interest in medical disaster preparedness at the State and local level is a reflection of an even greater reduction at the Federal level.
- An improved medical disaster posture will not happen unless FEMA takes the initiative.

Recommendations

It is recommended that FEMA:

- Review the nationwide level of readiness to activate and manage Emergency Health Service organizations.
- Pursue research on its own health and medical related responsibilities particularly health resource damage assessment and the emergency management of health resources, specifically supplies.
- Document the nationwide availability of essential crisis related health resources.

## APPENDIX A

### CONFERENCE ON CD RELATED EMERGENCY MEDICAL PLANNING

The reader is cautioned to note that while every attempt to prepare an accurate transcript of this conference was made, it is possible that some of the comments might not completely represent the intent of the individual quoted.

CONFERENCE ON CIVIL DEFENSE RELATED EMERGENCY MEDICAL PLANNING

Holiday Inn, Bethesda, Maryland

July 9, 1979

Attendees

Madge R. Swann	HRA	436-7234
Bob Handy	HRA	436-7240
Dick Salamandra	HSA-EMS	436-6295
Jonetta Darden	PHS	443-1167
Gordon Johnson	PHS/FDA/BRH	443-6220
Fred J. Haase	FPA	566-0975
James W. Kerr	DCPA	694-1811
Leo H. Snyder	HSA/EMS	436-7677
Walter C. Levi	HRA/BHP	436-6753
Paul Kaetzel	National Capitol Systems, Inc.	659-9383
Charles Anderson	National Capitol Systems, Inc.	659-9383

Charles Anderson opened the meeting by stating that its purpose was to look into ways and means by which active ongoing EMS groups and HSA groups could adapt their current mode of operation to include a certain amount of civil defense related medical planning and operational responsibilities. He stated, "Our approach to do this work is to start off by getting a group together in Washington which is representative of all Federal agencies which have anything to do with the subject. After today's meeting NCSI staff will be visiting representatives in California, Colorado, and Pennsylvania to talk about the issues and get their impressions. We will then reconvene this group in the fall to consider the conclusions of the people in the field as to whether this is a viable concept, and if so, how the States could implement it at minimum cost. Several people are going to give 10-15 minute overviews of what their agency does, dealing particularly with those responsibilities which are related in any way to civil defense medical planning.

Those present were then introduced by Dr. Anderson. He said that Gordon Johnson was sitting in for Dr. Schlien.

James Kerr reported. His subject, "Overview of Civil Defense," he said, can be taken a number of different ways. "DCPA's charter goes back to the Federal Civil Defense Act of 1950. It says we are to reduce the immediate effect of attacks on lives and property. Various components do not always get equitable weighting, but we have attempted over the years to sort things out as best we can. We do try to keep our eye on what happens in peacetime, whether it involves industrial explosions, transportation incidents, or whatever. In any case, it is a vehicle for learning how to do our wartime job better. In addition to specifics allocated to DCPA, there are within the government the various delegations of responsibility, including responsibility of HEW, NRC and what have you. Our present approach to things within DCPA in the current administration has been in case of doubt do the R&D. As a result, the research program of DCPA has expanded in the last several years. On the last day of 1978 there was \$8.2 million for R&D. Now in the third quarter of this fiscal year just ended, we have already spent more on R&D than in all four prior quarters so at least we're taking the job seriously.

"One of the things we have been doing has been to pave the way for a smooth transition into FEMA. Can there be anybody who hasn't heard that we are transitioning into FEMA? On the first of April some emergency broadcast systems and the insurance and fire administrations went into FEMA." Upon questioning, Mr. Kerr said the Acting Director is Gordon Vickery who is head of the Fire Administration and the Director Designate is John Macy.

"Looking at the way things come together you can see how the President could decide any number of different ways to restructure things when you put that many organizations under one roof. This is a conscious move on the part of the President to streamline the Federal level management so that state and local people do not have to do business with a half dozen agencies to get the job done. The internal arrangement in FEMA will make some difference to this The Executive Order which is now required to accompany the reorganization was in final draft last week and was in the hands of the last person to read it

before the President. Apparently the specifics at that level have been worked out so people are talking about the 15th of July being the likely date for FEMA to take shape. As you look in the R&D programs in the various components of FEMA you find the only significant one is the one at DCPA. Those places that do have something 'researchy' do not have much of a budget. I hope we don't wind up being dismembered. We can almost draw a parallel with health-related events in the last 20 years. I think we have things under control. That isn't all that important. Really we think we have a chore, whether we stay in DCPA or don't. Whether or not there has been a reorganization we feel that the upgrading of the type of care and planning it is based on, is a major chore. It is something we haven't been able to give our attention to adequately in the past. And we're looking forward to NCSI's research project which will be a key element in our moving ahead. I would be glad to take questions on FEMA, DCPA matters. But we do have another FEMA representative coming up."

Dr. Anderson asked, "If you are going to guess, how would you say the position of civil defense vis-a-vis PHS will change at all because of FEMA? Do you see that somewhere in the future again?"

Mr. Kerr said, "I see something like that shaping up if the President and head of FEMA take all words seriously that are on paper. So if the President says, 'Look, never mind what it says on paper--I want the job done and somebody get the details taken care of and run it properly.'; FEMA has no power to compel another agency to spend money. Nobody other than the President can compel them to."

Mr. Kaetzel asked, "Do you see the possibility of Federal delegate agency funding in some way?" Mr. Kerr said, "Yes."

Another question was, "What is a delegate agency funding?" Mr. Kerr said, "If the old Federal Civil Defense Agency had had all the money to do all the jobs there were, they would, in fact, have money in their budget for the other agencies who have responsibility for civil defense. There were 30 odd; at the moment there are about 20 who have disaster responsibilities. So if you put it at its simplest, the Civil Defense Agency budgeted for all civil defense

activities of Federal agencies. Congress then began to think they shouldn't give it all to one agency. Pretty soon OMB began cutting the delegate agency request. So as a result, lots of things began to fall through the cracks. I'm hoping it will be better."

Mr. Kerr said, "Without the concept of delegate agency funding, the President should instruct OMB to get an estimate from FEMA as to what emergency funding other agencies should have and be sure it's in their budgets. Then when it goes to Capitol Hill things would go more smoothly. That sounds a little Utopian to me. I don't think we can imagine it working that well. I do think if the President, OMB and Congress expect FEMA to take its role seriously, and expect delegate agencies to take their roles seriously, things would move quite a bit."

Col. Haase said "In the last Fiscal Year OMB decided that funds for emergency planning should all be handled by one agency to make it easier for them to oversee."

Mr. Handy asked if legislation is now being drafted to establish FEMA. Mr. Kerr said it was beyond that point; that pieces of FEMA went in and the rest is under the Executive Order. The Executive Order is predicated on a certain defined superstructure so the President will know what he has created. There is pretty general agreement about the basic components of FEMA.

Mr. Snyder asked, "What about Federal regional centers?" Mr. Kerr said, "There will be 10. The locations have been chosen. Real estate procurement is under way." Mr. Snyder asked what agency are they in now. Mr. Kerr said, "They belong to DCPA or GSA. People are still assigned to FDA or whoever. Fire and insurance people didn't have enough to make difference. Fire didn't have anybody. Until the Executive Order comes out, regions are FEMA agencies. Regions will be the same as current HEW regions."

Col. Haase said "Our Region 7 was Dallas. Now in the new set-up it will be Region 6 and Kansas City will be 7. They reversed the two in numbering but they are the same cities."

Mr. Kaetzel said, "a couple of years ago there were a series of meetings where DCPA stated they needed some health support and we provided some broad guidelines through Dr. Erickson."

Col. Fred Haase presented his report on the role of the Federal Preparedness Agency. Dr. Anderson asked him to tell the group what he does. He said "He began in the civil preparedness business in August 1964, detailed to the White House from the Army Medical Department. He said it was then called the Office of Emergency Planning and then the FDAA Disaster Program was part of OEP and DCPA was OCD. He said he came to what was then called the Office of the Health Adviser, who was an Assistant Surgeon General, Public Health Service, on detail to the Office of Emergency Planning. Many were detailed from the uniformed services to the Office of Emergency Planning to do specific assignments. At that time they had just given the terminal treatment to a very useful mechanism they had during earlier times called 'Inter-Agency Health Advisory Board.' This was composed of chief medical officers of the Departments and Agencies of Government.

"The status of emergency health preparedness has been given very short shrift. In funding priority it isn't very high. I don't think this reflects the fact that people trying to keep fair are not trying to do a job; it is just that other things in Government have been considered a higher priority. It will probably continue to be that way even under FEMA. Presently, under FEMA, I have seen no plans to have any identifiable organization associated with the health function. I think more likely it will be performed as part of some function or package, perhaps as in our agency today as part of the resource management function along with management of fuel, minerals or what have you. The philosophy among our management is that health is no different than any other resource. In attempts to explain this you have the feeling in most cases they have already decided--"don't bother us with this again." If you subvert the function by sticking health in any of these boxes you automatically are jeopardizing the prospect that it will be factored into planning in other areas. I can see very strong need for health input into research, education and training, plans and preparedness and recovery. I am not so certain the people who are putting this



together feel that way. Maybe through experience or through what happens they might get religion, but I don't think this is really the way to do it. As far as FPA is concerned, our current management attitude toward the FEMA establishment is that there will be a requirement to continue functions we have responsibility for regardless, of the boxes they will be performed in or who will be the responsible person. There is no question that there will be a need for someone to plan for the long-range issues of stockpiles or alternatives to stockpiles, continuity of government, management of resources, and the development of decisions as to what can be done to assure we will have resources when we need them and where we need them. Civil defense functions that are assigned will have to be continued somewhere. I don't see too much change in what will be done. In case of civil defense versus public health, I think there is still a requirement for a combination of public health service interest, civil defense interest, interest of our agency and with those of FDAA. We did have all these elements together at one time at OCDM as Jim Kerr has mentioned. I think more importantly, I'm a great believer that it doesn't make a big difference what boxes you draw. The key is how much perceived clout, how much respect can it gain from the outside world. Respect will come from people in it who know what they are doing. Nothing will work unless it has support and backing of the Chief Administrator, and Congress has provided appropriate resources to do the job. We have some high priced help-- lots of 15's and 14's, but they will take a person earning that kind of money and provide him hardly any support. He has to vie with a dozen other professionals to get somebody to type a letter for him. I hope under FEMA they will recognize we really need to have professionals that are going to have people to do the pick and shovel work for them. People making policy must have an appropriate environment to work in. I think we have to be optimistic. Hope springs eternal. We do have a big problem ahead if we are not given the right management tools to do the job. I am gratified Harold Gracey is doing the job he has been doing. It is a very difficult job. Pulling things together has not been too easy. HEW has many priority day-to-day demands on its people. But Harold seems to be getting his act together more and more each day. I work closely with him and George Russell. I think there is much work to be done in this field. There are any number of problems that need to be addressed.

I am particularly distressed that the private sector has not risen as they did in the 50's and 60's to really get in there and pitch for a stronger voice in this FEMA set-up for emergency preparedness in government. At one time AMA was active and strong; now they have essentially backed out of this. I think part of it is we have not responded to them. For example, they invited our director a couple of months ago to come to Chicago and speak on emergency medical services. He declined and made it clear he didn't want anybody to talk to them--even our regional director in Chicago. On the other hand, I see DCPA very active with the private sector. I hope that FEMA will continue this type of activity on a larger scale. Resources are in control of the private sector and state and local governments. We have really very little to offer at the Federal level. It might be better if we retired from the scene in a major emergency and let the locals run it. I think they're being fooled in many respects. We don't have much in the way of organization to spring into action."

A question was raised as to the extent of the strategic stockpile of medical supplies. It was stated that stocks of items such as morphine and quinine and other drugs have been deteriorating; as a matter of fact, most are fast disappearing. Hardly any state has provided for maintenance of supplies. Opinion was expressed that in a very major disaster they would be almost inconsequential.

Mr. Haase said he was appalled to find that medical mobilization reserve stocks were so low. During the Vietnam war he said McNamara's budget people had ordered them to live off the shelf. As a result, never to this day have they recouped their stock levels which they had established as necessary. Therefore, in case of civilian disaster such as an earthquake in the San Francisco Bay area, the military doesn't have sufficient medical reserve stocks to meet their needs.

He said there has been talk about bringing in military medical hospitals to replace hospitals damaged in an earthquake. MUST hospitals are sophisticated units taking highly skilled technicians to operate them. They use a lot of fuel to run them. You don't take off within the next 10 minutes and

set up ready to go. It takes three or four days to set up a unit. We had a meeting in which we reviewed earthquake arrangements and this came to light. It is an acknowledged fact that there will be a lag time of three to four days before substantial military medical support can be brought to the scene, which means local plans have to take into account this fact, either stockpiling or working out some kind of mutual agreement with local adjacent jurisdictions. A lot of planning is needed in all areas."

Mr. Kaetzel asked if there have been studies where the military might plan to use civilian hospitals. Col. Haase said this is one thing that has concerned him lately because they have not coordinated their planning with his agency in many cases. "One of our recent studies was the Maximus Study dealing with the use of civilian hospitals in a war contingency for housing military casualties. They did this study. It was not coordinated with our agency even though we are charged with advising the President on roles of various government agencies on management of the nation's resources, and they knew this but they adopted this concept. They tell me DOD is putting out a policy directive as the Secretary's policy, that in any future war the casualties will be returned to designated civilian hospitals with contracts for 50-bed components earmarked for casualties. They also plan to use a large number of VA hospitals. I inquired from them as to whom they coordinated this with. My best information is they have not done a good job of coordinating this with anybody. I am hoping in FEMA that one of the early things the director does is to have an understanding with the Secretary of Defense and OMB that in any activities of this nature the plans will be coordinated with him."

"I think one of the linkages we do have now and one that could be strengthened under FEMA is the fact that through our health office we contact Harold Gracey as our link to HEW. Harold Gracey has linkage with HRA people, with Dick Salamandra's office, with FDA, with anybody in HEW that needs to be brought to bear on a given problem. So at the Federal level I think we do have a good linkage that could be strengthened."

Mr. Kaetzel asked if there is any definition that defines when FEMA gets into action on coordination. He asked if there is any entry point when FEMA

might get into action such as in the case of an earthquake. Mr. Kerr said it was clear the Federal people do not take over unless there is a Presidential declaration.

Mr. Kaetzel said that the FDAA said they could not do very much in the area of emergency planning until the President declared an emergency. Col. Haase said they do have a Federal plan for earthquakes in the San Francisco area. Dr. Anderson asked if we can get a copy of this and Mr. Kerr said it could be obtained through Ugo Morelli.

Dr. Anderson then introduced Jonetta Darden, substituting for Harold Gracey on the subject of PHS Emergency Preparedness Activities. Ms. Darden said she would like to bring to the attention of the group that PHS is now working on a model integrated response for the regions, and it has been developed to cope, not only with National disasters, meaning nuclear attack, but also with accidents, earthquakes and floods, which are more or less regionally specific. Basically, the plan is broken down in emergency health services. She said they have developed functional statements for personnel to follow in case of emergency. At this point they have staffed it out to regions and PHS agencies. Recently they participated in a readiness exercise. She said they learned a great deal from that.

Dr. Anderson asked if this is what is known as the California plan and she said it is. She said they want it to be functional for every region and integrated into whatever exists in that region. They don't want to make it too difficult. Basically, it is a "how to" plan. She said they learned from their readiness exercise that they need to step up their communications network to a higher level to be current in an emergency situation.

A question was asked about two contacts on earthquake disasters. It was stated that Ken Mosier and George Stevens are working very closely on this.

Mr. Handy said the Region 9 plan was put together under the Regional Administrator. He is the one who signed it.

Col. Haase said that plan has been tested by HEW people and the VA is active in planning in the San Francisco area. He said all Federal agencies have been working under General Woodward's leadership to develop a plan.

Mr. Salamandra asked Ms. Darden how much of a staff they have in PHS. She said their staff is very small, and that a study is under way by OMB on this at present. It was stated that HEW's staff is also limited; that essentially there is no disaster planning going on with Federal responsibility. States are still maintaining it.

Dr. Anderson then introduced Dick Salamandra whose topic was Overview of Emergency Medical Services Systems. Mr. Salamandra said the intent of the EMS Act of 1973, which was amended in 1976, is to provide funds to support the development of regional emergency medical service systems. These systems will have the ultimate goal of reducing death and disability. The regional system is one which provides for the arrangement of personnel, facilities, and equipment for the effective delivery of emergency medical care in an appropriate geographic area. This system is administered by a public or non-profit organization. Each entity is eligible for three types of grants on a competitive basis: (1) Planning grants--to plan the system; (2) Initial operation to get the system started; (3) Expansion grants--to improve the system.

Since FY 1974, the EMS program has awarded \$182.6 million for planning, establishment, and expansion of regional EMS systems.

The states have designated 304 regional EMS systems. To date, 292 of these systems have received grants under Title XII of the PHS Act. Eighty-six systems are in planning phase, 118 are in the initial operation phase, 59 are in the expansion phase, 29 have completed their grant eligibility and 12 have had no funding under Title XII. The average Federal investment for each system is \$1.8 million. This amount is matched by the grantee.

Component 14--Disaster Plan Linkage. The EMS system must have a plan to assure that the system will be capable of providing EMS in the systems area during mass casualties, natural disasters and national emergencies.

The EMS system is in the regional health disaster organization. It is the emergency medical organization that will work with other agencies during a disaster to provide emergency medical care. The EMS system must be linked to the local, regional, and state disaster plans and participate in exercises to test disaster plans.

Training grants are also available for educational entities, hospitals, and public entities. Thirty percent of those funds are earmarked for training in emergency medical care.

We describe the area covered by the emergency medical service system as a catchment patient flow area, which provides 95 percent of the care for all emergencies. Only highly specialized services should be obtained outside of the area. The area must contain adequate population and resources to implement and sustain an EMS system operation.

There was some discussion on the fact that some clarification appears to be needed as to the operational role of whoever would be the regional EMS director. Following discussion on this, Dr. Anderson said that EMS regional and Federal personnel told him that if the regional planning is well done in the event of disaster, the EMS regional staff would have no role while a disaster is occurring. In other words, the system is supposed to be designed to work itself.

Mr. Kaetzel said if you run out of antibiotics, what does the regional group do? Reply was they do have mutual agreements within regions. Each regional system should be able to handle 95 percent of the caseload.

Mr. Johnson brought up the question of the county and EMS regions in terms of cross boundary jurisdiction. He asked who had the authority to make emergency decisions. He said the question was central to the whole study. Dr. Anderson said the answer is that no one within the EMS structure has that authority.

Col. Haase stated that if we are talking about a declared national emergency, whether EMS system or regional EMS, or hospital or county, no matter what, their plans will come under the overall control of an Office of Defense Resources. The national and regional levels could be run by FEMA as caretaker until such time as the ODR is fully established. He said there are a lot of standby documents that could be implemented.

Dr. Anderson said that the state as a unit is much too big to be used as the civil defense building unit and counties are too small. He said the EMS region might be about right in terms of size.

Walter Levi then gave an Overview of Health Systems Agencies. Mr. Levi said that prior to being with the Bureau of Health Planning, he was with the regional medical programs and he did have occasion to dispatch four physicians to Wilkes Barre when they had a flood. He said anything involved in a health system agency is going to involve a lot of people. "When you talk about a health systems agency the government has so many acronyms." He then displayed a health service map of the United States. He said he was going to talk about one HSA and what they were doing on emergency planning. He said the green on the map (Pennsylvania) represented the Keystone Health Agency. The red is the HSA where the Three-Mile Island emergency occurred. He said the regional medical programs, comprehensive health plans and Hill Burton program were reorganized. Since 1974 they have been reorganized again. He said they used to be called the Bureau of Health Planning. This came again in 1974 which was a \$1 billion program for three years. They are on a continuing resolution

for a year. The Health Systems Agency was created by Public Law 93-641. One of the key things that was established was the National Council on Health Planning and Resources Development. There is a 15-member advisory council. Dr. Anderson asked who is on this 15-member council. Mr. Levi said they are consumers; in fact, the chairperson of the National Advisory Council is a consumer. There is also somebody from labor, Blue Cross, physicians and one is a former Secretary of HEW. Dr. Anderson asked if they met once a year and Mr. Levi said they met once a month. "It took a while to get them constituted. They are very active. In fact, they have subcommittee meetings. About a month ago they had consumers come in and say what was wrong with the program. They have awarded new contracts for centers; one does resources development, one does technical systems. One is located in Wisconsin, one is located in Washington, one in California, and one in New Orleans.

Dr. Anderson asked what the budget was and Mr. Levi said he wasn't sure, but would get that information. Designated health service areas have to have a population of at least 500,000 persons and less than 3 million. There are certain exceptions. If you have one state with 500,000 people, that could be a single service area. There are 211 health planning areas broken down into 203 health service agencies. Out of 211 health planning agencies there are 187 of these agencies fully designated as long as the program exists. One of the other features is that they gather and analyze data.

Dr. Anderson asked, as a rule of thumb, how many people are in a health agency. Mr. Levi said some of these health agencies have over 100. Dr. Anderson asked what portion were salaried. Dr. Levi said they had a salaried staff of about 12. The law also created the State Health Planning and Development Agency, known as SHPDA.

Mr. Levi then discussed the Statewide Health Coordinating Council. He said they prepare the state planning and also review the budget and applications for the Health Systems Agency.

Mr. Levi said, "I would like to talk about what is going to happen with Keystone. By 1983 emergency medical services will be available throughout



the region. They also say by 1983 all counties will develop EMS systems, which means they do not have them now. By 1983 all trauma cases will be systematized. As far as natural disasters are concerned, there is a dam located somewhere in here where they have now installed natural disaster sensors. Limitations are placed on these data collection because of the funds needed to carry out functions. Also, there is lack of coordination between the regional and local disaster plans."

Mr. Kaetzel said there was no coverage anywhere for health supplies-- wholesale drug supplies, etc. Col. Haase said, "This parallels what you find in the Highway Safety Act. Congress gives them so many dollars each year and it is divided among the states. Each governor has a coordinator and he determines how it will be spent. There were 16 standards, one of which was emergency medical and rescue. Some states had never spent a nickle in this area of emergency preparedness whereas other states had done fairly well."

Mr. Johnson asked, "If a local hospital decides they are to spend some money for emergency preparation which would cost \$100,000, do they have to get permission from the local HSA to do that and, if not in the planning for that region, would it be disapproved?" Mr. Levi said "It would be based on a decision as to need in terms of planning from national standpoint. Everyone interested in capabilities at local levels should crank HSA planning consideration into your local formula."

Dr. Johnson then reported on the subject of Overview of the FDA Radiological Planning Functions. He said, "I have the feeling that most of the area involvement that the Bureau of Radiation Health is concerned with, is sort of an advisory or support role." He said Schlien is the representative from HEW to the Interagency Committee that has to do with planning for response to nuclear fixed facility and transportation agency. The chairman is Bob Ryan, NRC. The main function of that committee is a planning function to assist states in planning and preparation for a nuclear emergency. In its charter it has nothing to do with civil defense. The major thrust has to do primarily with power plants. The major thrust has been in terms of regional

preparation around nuclear facilities. One of the relevant requirements for licensing is that there be hospitals in the area of nuclear facilities that have agreed by contract to provide emergency services in case of nuclear contamination or injury. In the guidelines that go along with that, they spell out in greater detail training of personnel, equipment, facilities, etc. The other relevant requirement is that there be an approved state plan to deal with nuclear emergencies. State plan approval in the past has been somewhat perfunctory. They are now looking much more closely at the total state package after the Three-Mile Island accident.

"FDA, which used to be in training areas of medical radiology, medical radiation uses, has gotten out of that business because funding was cut off. But essentially, it has no training role at all. We do have a role in terms of cooperation or coordination with state activities where we work with state organizations."

Dr. Johnson - "It ought to be on your list that our organization has people from high state levels responsible for radiation control from virtually all states, including the District of Columbia--all aspects of radiation, including emergency response, waste disposal, etc. The nuclear facility and the transportation planning agency has a planning and assistance responsibility to the states. Originally, the funding activity was by various participating agencies, some of it having to do with HEW, some with Transportation (DOT), some having to do with EPA, etc. As of the current fiscal year, based on OMB directive, all other agencies were told their budget requests would not be granted and, that any requirements should be included in NRC budget requests. The NRC is the only Federal agency funded for responsibility delegated under that. Our particular office, Bureau of Radiation Health, has been acting in the role of supporting the interagency task force. We have made recommendations and are cooperating in terms of a training program, etc. I think that is about all I have that is relevant."

Mr. Kaetzel asked about the current status of FRPNE (Federal Response Plan to Nuclear Accidents). "If there is a weapon in downtown New York--

whether it is a terrorist who blows up part of Jersey City or Newark, it isn't much different from a nuclear bomb. I know FPA is working in this area. HEW is supposed to be providing health guidance to that plan. FRPNE is only interim guidance. FRPNE was published as an interim plan. Apparently FRPNE was coordinated in FPA by John Massena. John is now acting head of the Office of Policy Evaluation in FEMA and is pretty busy in that capacity. To my knowledge, he hasn't worked on FRPNE for over a year and was stalled because FDAA took exception to statements regarding our role, and apparently it was never allowed to go beyond that point. I don't know what is going to happen to it under FEMA. The whole idea was that it was supposed to be an umbrella plan. In the assigned roles of Federal agencies, including HEW, at Three-Mile Island, I think it was actually carried out but not as a formal identifiable process with FRPNE.

Following lunch, Dr. Anderson said he had two questions for everyone. "Our tentative plans are to visit Pennsylvania, California, and Colorado by October at the latest, at which time we want to come back and meet with you again. Who should be here in October who is not here now?" Col. Haase said whoever is in FEMA at that time should be included; also the VA.

Mr. Johnson said, "I'll admit I'm a little uncertain as to the purpose of the group. It says what you are studying is essentially ways in which some degree of best use can be made of HSA and EMS and it says for civil defense purposes and specifically for nuclear attack. What we have been discussing today is a whole lot more than nuclear attack eventuality."

Dr. Anderson said, "To answer your question, it should not be limited to nuclear attack. It is a question of the EMS and HSA civil defense role. It involves what happened at Three-Mile Island, earthquakes in San Francisco, and it also involves general war." Mr. Kaetzel said with FEMA coming in it's a little broader.

Mr. Johnson said that he felt to carry out the purpose it was necessary to get approval at the higher level--from those heads of the agencies involved. He said he thought it was highly desirable to try to get that at the beginning

if we are going to come up with more later on. He said you have to go to the level of HEW and PHS to get cooperation. Mr. Johnson said HEW had not been advised. Dr. Anderson said they had been.

Mr. Kaetzel said anything of this type goes to the Secretary for Health. If there is a big policy decision involved, it will go to the Secretary for advice, concurrence, assistance, or whatever.

Mr. Johnson asked, "At what point would you ask them to speak for the agencies?" Dr. Anderson said, "Next January or February when you have a draft report."

Mr. Johnson said his experience had been if you do not invite someone in at the beginning, you will have trouble later.

Mr. Salamandra said George Russell of HEW should be invited to the next meeting.

Others proposed to be included in the next meeting were Bureau of Health Manpower and NCHS.

Dr. Anderson asked if Jim Erickson would be the focal point person as far as PHS is concerned in subsequent PHS implementation. The answer given was that it would be Harold Gracey or his boss.

Mr. Handy said the HRA is now developing a mobilization plan as to what it will do in the event of actual emergency. "In other words, we would become bureau resources management so I don't think we should go far down the pike unless we are coordinating with what would be the role of HSA, what kind of information is provided. I think these things should be coordinated."

Dr. Anderson said, "As far as we are concerned, our coordination will have to take place through Harold Gracey."

(Speaker?) "We have a large data bank. We recently reviewed all of our resource data requirements and we came up with a spanking new list of things we think we need. This could work in very nicely with what you are talking

about. If you are going to sit at National level and try to shift resources and set policy on use, you have to know what they are to begin with. We don't know in some cases. We don't have in our computers anything on your area."

Dr. Anderson said, "We are not about planning Federal response to attack but we are specifically looking at how EMS and HSA could be modified to assume a civil defense related role and that is only part of the picture."

Mr. Salamandra, citing Three-Mile Island as an example, asked where EHS was. Dr. Anderson said it doesn't exist. He said that from what he had been able to find out, Secretary Califano was quite distressed that HEW is essentially unable to respond satisfactorily. He got conflicting information. So the time is right for something positive to come out in the EHS sense, he said.

It was also suggested that it might be well to invite the Assistant Secretary for Management and Administration to the next meeting. He was rendering a report and didn't delegate it below himself--a study of HEW's performance in Three-Mile Island. The report was to include what HEW should be doing in the future on similar incidents, and what were HEW's authorities and responsibilities in acting on this emergency.

Dr. Anderson asked if anyone had any specific questions they would like to ask relative to this specific issue in terms of ad hoc opinions. Should HSA's or EMS's even think about these issues.

The questions to be asked would center around resources and what training would be available.

Col. Haase said in a matter of national emergency situation, how do they communicate with each other? What is the system that exists? He said the interesting thing is that although they talked for years about civil preparedness, only once was it officially defined as "civil defense." It is defined in the Civil Defense Act. Dr. Anderson said EHS is defined in the current Executive Order the same as it was 15 years ago.

(Speaker?) "I think radiation should be treated no differently than other things that could affect the public. The key to any successful program is to have it simple and have a large number of people know how it works."

Mr. Johnson said, "How can we change what exists to better respond to our area of responsibility? My response to that observation is that it is wrong. It should be what are the total needs and how can we enter into the context of fitting into total needs most effectively?" Dr. Anderson said, "Theoretically, you are correct. But the only way the medical aspects of civil defense are ever going to be addressed is through a viable program through PHS, EMS and HSA."

(Speaker?) "Where is the working unit to deliver emergency services in a civil defense crisis? What is the working unit that will actually do it?"

Mr. Levi said another thing HSA could do would be to assimilate additional aspects of disaster.

Col. Haase said some state governors have taken the initiative to adopt comprehensive state planning as opposed to fragmented planning typical in most states. He said you might want to see how it ties in with Walt's HSA plan.

Mr. Salamandra said, "In an area within a state you have an HSA. Within that HSA you have two EMS regional systems and you have civil defense organizations by city and county jurisdiction. Even if HSA assumes responsibility, I think you need a civil defense counterpart at this geographical level to take care of this situation. Today it doesn't exist."

Mr. Johnson said, "If, in fact, authority to deal with an emergency is the county sheriff, why do you need another structure other than the county sheriff whether it has to be civil defense or non-civil defense? Basically, I am raising a point on planning--start with existing structure whether it is ideal or not. Recognize this is what is in place. There is a mayor, there is a county sheriff, there is a governor, etc. Take the existing structure, look at what it is doing, how it would respond."

Mr. Kaetzel said, "We went to six states and they are not doing anything or very little on emergency disasters." Mr. Johnson thinks it is absolutely essential to start out with what is there, and if we are going to add a layer, we must be convinced that what we are doing is better than what we have now.

Dr. Anderson said, "No one is assuming automatically a priority for EMS and HSA groups. The object is to go to them and talk to them. They might not like the idea. The objective is to see if civil defense can "piggyback" on existing systems."

Mr. Snyder said that at the local level there are more day-to-day pressing issues than what we're talking about here. He said we should go out and talk to these people even though there is no concern right now because there are no emergencies.

Col. Haase said people by and large are in favor of preparedness. "It's just that they assume we are taking care of it for them."

Dr. Anderson said "I have always thought civil defense was over-planned. The plans have been too specific and called for unrealistic goals, particularly on the medical side. But the real important aspect of civil defense medical planning is control of resources. There are no plans for that even. It takes very little to plan. We are not talking about an enormous amount of money to go into this but someone needs to be responsible for it and it isn't happening."

Dr. Anderson said he was going to San Francisco and Denver this week to meet with state and regional people. He said he would really appreciate all of the group thinking about this in their spare time. "Between now and September 1st, if you have any brilliant earth-shaking ideas, please get them to Harold Gracey so he can get them to us before we go out."

Mr. Handy said, on funding, you are much more likely to get dollars appropriated for the purpose if the emergency function were written into the planned program before Congress. He said that obviously if you have a legislative foundation so that it is debated in the hearings, you have a better

chance to get it. He said, "Get it written in the law. That will be a test of how serious the country is about the thing."

Col. Haase said with regard to the study on needs for beds in a major emergency, the present effort to cut down on hospital beds may be in conflict with this. Mr. Kaetzel said what disturbs him even more would be the damage to medical supplies, especially in the Northeast Corridor where so much is manufactured.

(Speaker?) "There is a need to determine which of these special products we need to make special provision for. There is a lot we don't know and nobody is available to really work on it. In the Commerce Office on Industrial Management, there is only one person that deals with the drug industry. They can only do one evaluation survey every six months or year so we have problems. There is the problem of biologicals in radiation environment. A national policy is needed concerning use of vaccine on people who have been exposed to radiation. Apparently there is some thought that radiation exposure may accentuate the effect of the virus. This next month there will be a big symposium of PHS people, VA, etc., dealing with the whole spectrum of blood needs in a national emergency, requirements for research-oriented emergency, the whole spectrum of needs.

Conference adjourned.



APPENDIX B

STATE EMERGENCY HEALTH SERVICE PLANNING FUNCTIONS

(RESPONSIBLE AGENCY)

**F/G 6/5**

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**STATE EMERGENCY HEALTH SERVICE PLANNING  
FUNCTIONS -- PRE-CRISIS**

(Responsible Agency)

SHD -- State Health Department  
EMS -- Emergency Medical Service  
HSA -- Health Systems Agency  
F&D -- State Food and Drug  
CD -- State Civil Defense

1. Designate a single official as responsible for overall direction and coordination of emergency health services and resources.
2. Give emergency assignments to key personnel, keeping rosters current.
3. Establish an emergency health services alerting system.
4. Designate an alternate protected site for EHS operations.
5. Establish a communications capability, linking EHS Emergency Operating Center to the State Command Center.
6. Determine essential operating records and reference materials (laws, regulations, policies, etc.) and preposition them at EHS Emergency Operating Center.

SHD	EMS	CD	HSA	F&D
15	2	3	0	0
11	6	2	0	0
8	8	4	0	0
4	4	11	0	0
3	5	11	0	0
16	3	1	0	0

7. Provide periodic training and orientation in disaster practices and emergency duties of assignees.
8. Maintain basic data on the location of health manpower, health care and health support facilities and on inventories of selected health supplies and equipment.
9. Develop capability to estimate post-crisis requirements and surviving available resources (Damage Assessment).
10. Provide guidance and consultation to assist regional, county, city or other local health departments and governments in developing and maintaining an effective emergency health services capability.
11. Incorporate preparedness actions into regular on-going programs.
12. Develop and prepare for issuance action documents imposing controls and provide guidance to communities concerning direction of emergency health service programs under various crisis contingencies.
13. Accumulate and preposition medical stockpiles and useful surplus property.

SHD	EMS	CD	HSA	F&D
9	7	4	0	0
15	3	0	1	0
6	1	11	2	0
10	8	1	0	0
7	10	3	0	0
13	4	3	0	0
6	2	11	0	0

14. Develop a program of preparing the individual to take care of himself and possibly others when there may be no professional medical assistance available (Red Cross, First Aid, CPR, Medical Self-Help).
15. Maintain active working relationships with existing State agencies and professional groups; negotiate agreements where applicable and exchange informational materials and plans (American Assoc. of Blood Banks, Red Cross, Medical Societies, neighboring States, etc.).

SHD	EMS	CD	HSA	F&D
10	9	0	0	0
11	7	1	0	0

# **EHS CRISIS WARNING FUNCTIONS**

(Assumed 2 weeks with possible international tension  
and need for moderate step-up in readiness)

SHD -- State Health Department  
EMS -- Emergency Medical Service  
HSA -- Health Systems Agency  
F&D -- State Food and Drug  
CD -- State Civil Defense

1. Assure that all EHS assignees know the alerting and relocation procedures.
2. Confirm all alerting system telephone numbers and distribute revised alerting schedule to team members.
3. Restrict travel and leave of EHS assignees.
4. Transfer any additional essential operating records or reference material to EOC.
5. Require EHS assignees to review State EHS plan and emergency action documents and modify as necessary.
6. Conduct EHS briefings and test exercises.
7. Inspect EHS-EOC and prepositioned supplies and equipment.

SHD	EMS	CD	HSA	F&D
7	8	5	0	0
8	6	6	0	0
12	4	3	0	0
7	5	6	0	0
12	5	2	0	0
7	7	6	0	0
7	7	6	0	0

(Crisis)

-2-

8. Relocate EHS assignees to (1) State EOC, or  
(2) EHS-EOC, as directed.

9. Coordinate the mobilization of Health Care  
Professionals.

SHD	EMS	CD	HSA	F&D
11	4	5	0	0
12	6	2	0	0

# EARLY POST-CRISIS FUNCTIONS -- STATE EHS

(Approximately 30 days post-crisis)

SHD -- State Health Department  
 EMS -- Emergency Medical Service  
 HSA -- Health Systems Agency  
 F&D -- State Food and Drug  
 CD -- State Civil Defense

1. Assume direct operational control over emergency health service functions anywhere within the State in the event of disaster beyond local control.
2. Maintain vital statistics, casualty and health situation reports.
3. Assess requirements and determine location and numbers of surviving health manpower.
4. Assess damage to and losses of health facilities (e.g., hospitals, nursing homes, clinics, blood banks).
5. Assess damage to and losses of health end-item inventories at wholesalers, retailers, hospitals, etc.

SHD	EMS	CD	HSA	F&D
12	1	6	0	0
14	2	4	0	0
14	5	1	0	0
14	0	5	1	0
11	0	4	1	2



(Early Post-Crisis)

-2-

	SHD	EMS	CD	HSA	F&D
6. Prepare time-phased estimates of requirements for essential health survival items, health materiel resources and supporting goods and services.	14	1	2	2	0
7. Determine surpluses and deficiencies of health resources by geographic area.	14	2	1	3	0
8. Assess health supplies and equipment distribution capabilities.	15	1	2	1	1
9. Requisition health facilities, claim and allocate supplies and equipment and assign available health manpower.	16	1	3	0	0
10. Arrange for the inter-community movement of patients, supplies wholesale and retail stocks and supporting materials.	8	3	9	0	0
11. Execute emergency action documents, i.e., suspension of private medical practice; cancellation of elective surgery, use of alternate bed sources, etc.	16	0	3	0	0
12. Assume operational direction over the delivery of medical care.	14	4	1	0	0

# INTERMEDIATE POST-CRISIS FUNCTIONS -- STATE EHS

(Approximately 1-3 months post-crisis)

SHD -- State Health Department  
 EMS -- Emergency Medical Service  
 HSA -- Health Systems Agency  
 F&D -- State Food and Drug  
 CD -- State Civil Defense

1. Provide State CD and resource management offices with technical advice and information related to provision of emergency health services.
2. Determine administrative and operational priorities as dictated by conditions reported through liaison with Federal agencies and other State agencies.
3. Determine total health requirements and conduct programs to meet State-wide needs for individual medical services, community health services, laboratory services, etc.
4. Provide for support of available surgical and medical services (justify claims for transportation, fuel, water, etc.).
5. Gather, analyze and distribute epidemiological intelligence related to emergency public health situation; advise on control of communicable diseases.

SHD	EMS	CD	HSA	F&D
11	8	0	0	0
11	5	3	1	0
17	3	0	0	0
11	3	3	1	0
18	1	1	0	0

	SHD	EMS	CD	HSA	F&D
6. Establish standards and provide technical information and advice on the salvage, processing, distribution and storage of food and drugs; assist in determining priorities for restoration of facilities.	9	0	1	0	10
7. Establish standards and provide consultation and assistance in operation of blood banks and laboratories.	17	1	0	0	1
8. Provide guidance and leadership to communities in the equitable distribution and effective utilization of health manpower; maintain working relationship with State emergency manpower agencies.	15	3	1	1	0
9. Interpret intelligence information to determine areas of critical health manpower shortages and nearest available resources; prepare claims to Federal authority for additional health manpower to meet State health needs.	15	0	4	1	0
10. Determine most effective intrastate utilization of manpower to meet civilian health needs, develop and coordinate training programs to meet evolving health needs.	17	0	3	0	0
11. Analyze crisis damage to health supplies and equipment and health facilities; periodically reassess their availability within state and adjust as necessary.	15	2	2	0	1

12. Receive and act on local government claims for health and supporting materiel resources.

13. Determine most effective and efficient intrastate utilization of health materiel resources to meet civilian health needs. Recommend improvisations to compensate for supply shortages and furnish guidance to communities on improvisation and restoration of health facilities.

SHD	EMS	CD	HSA	F&D
12	0	6	1	0
13	2	3	0	1

APPENDIX C

STATE EMERGENCY HEALTH SERVICE PLANNING FUNCTIONS  
(POTENTIAL AGENCY INPUT)

# STATE EMERGENCY HEALTH SERVICE PLANNING

## FUNCTIONS -- PRE-CRISIS

(Potential Agency Input)

SHD -- State Health Department  
 EMS -- Emergency Medical Service  
 HSA -- Health Systems Agency  
 F&D -- State Food and Drug  
 CD -- State Civil Defense

1. Designate a single official as responsible for overall direction and coordination of emergency health services and resources.
2. Give emergency assignments to key personnel, keeping rosters current.
3. Establish an emergency health services alerting system.
4. Designate an alternate protected site for EHS operations.
5. Establish a communications capability, linking EHS Emergency Operating Center to the State Command Center.
6. Determine essential operating records and reference materials (laws, regulations, policies, etc.) and preposition them at EHS Emergency Operating Center.

SHD	EMS	CD	HSA	F&D
17	14	13	6	2
16	17	12	3	4
11	15	11	3	3
10	12	19	3	2
9	14	17	2	1
18	15	15	6	5

(Pre-Crisis)

-2-

	SHD	EMS	CD	HSA	F&D
7. Provide periodic training and orientation in disaster practices and emergency duties of assignees.	17	15	16	2	3
8. Maintain basic data on the location of health manpower, health care and health support facilities and on inventories of selected health supplies and equipment.	15	17	11	14	3
9. Develop capability to estimate post-crisis requirements and surviving available resources (Damage Assessment).	14	13	17	4	4
10. Provide guidance and consultation to assist regional, county, city or other local health departments and governments in developing and maintaining an effective emergency health services capability.	17	15	10	8	2
11. Incorporate preparedness actions into regular on-going programs.	13	18	16	8	5
12. Develop and prepare for issuance action documents imposing controls and provide guidance to communities concerning direction of emergency health service programs under various crisis contingencies.	18	15	16	9	5
13. Accumulate and preposition medical stockpiles and useful surplus property.	13	9	20	2	6

(Pre-Crisis)

-3-

14. Develop a program of preparing the individual to take care of himself and possibly others when there may be no professional medical assistance available (Red Cross, First Aid, CPR, Medical Self-Help).

15. Maintain active working relationships with existing State agencies and professional groups; negotiate agreements where applicable and exchange informational materials and plans (American Assoc. of Blood Banks, Red Cross, Medical Societies, neighboring States, etc.).

SHD	EMS	CD	HSA	F&D
17	17	13	7	2
14	14	12	8	4



# EHS CRISIS WARNING FUNCTIONS

(Assumed 2 weeks with possible international tension  
and need for moderate step-up in readiness)

SHD -- State Health Department  
EMS -- Emergency Medical Service  
HSA -- Health Systems Agency  
F&D -- State Food and Drug  
CD -- State Civil Defense

	SHD	EMS	CD	HSA	F&D
1. Assure that all EHS assignees know the alerting and relocation procedures.	12	14	18	3	2
2. Confirm all alerting system telephone numbers and distribute revised alerting schedule to team members.	12	14	16	2	1
3. Restrict travel and leave of EHS assignees.	13	13	9	2	3
4. Transfer any additional essential operating records or reference material to EOC.	11	12	14	3	3
5. Require EHS assignees to review State EHS plan and emergency action documents and modify as necessary.	14	12	13	3	2
6. Conduct EHS briefings and test excercises.	12	16	17	3	2
7. Inspect EHS-EOC and prepositioned supplies and equipment.	13	14	17	2	3

(Crisis)

-2-

8. Relocate EHS assignees to (1) State EOC, or  
(2) EHS-EOC, as directed.
9. Coordinate the mobilization of Health Care  
Professionals.

SHD	EMS	CD	HSA	F&D
14	14	14	1	1
16	16	13	3	1

# EARLY POST-CRISIS FUNCTIONS -- STATE EHS

(Approximately 30 days post-crisis)

SHD -- State Health Department  
 EMS -- Emergency Medical Service  
 HSA -- Health Systems Agency  
 F&D -- State Food and Drug  
 CD -- State Civil Defense

1. Assume direct operational control over emergency health service functions anywhere within the State in the event of disaster beyond local control.
2. Maintain vital statistics, casualty and health situation reports.
3. Assess requirements and determine location and numbers of surviving health manpower.
4. Assess damage to and losses of health facilities (e.g., hospitals, nursing homes, clinics, blood banks).
5. Assess damage to and losses of health end-item inventories at wholesalers, retailers, hospitals, etc.

SHD	EMS	CD	HSA	F&D
16	13	16	2	2
20	14	12	4	3
18	17	14	7	2
18	15	14	9	5
16	13	15	7	11

(Early Post-Crisis)

-2-

	SHD	EMS	CD	HSA	F&D
6. Prepare time-phased estimates of requirements for essential health survival items, health materiel resources and supporting goods and services.	16	13	14	9	6
7. Determine surpluses and deficiencies of health resources by geographic area.	18	15	12	9	4
8. Assess health supplies and equipment distribution capabilities.	19	13	14	4	6
9. Requisition health facilities, claim and allocate supplies and equipment and assign available health manpower.	18	14	15	3	5
10. Arrange for the inter-community movement of patients, supplies wholesale and retail stocks and supporting materials.	15	15	17	4	9
11. Execute emergency action documents, i.e., suspension of private medical practice; cancellation of elective surgery, use of alternate bed sources, etc.	16	11	14	3	2
12. Assume operational direction over the delivery of medical care.	16	13	8	2	3

# INTERMEDIATE POST-CRISIS FUNCTIONS -- STATE EHS

(Approximately 1-3 months post-crisis)

SHD -- State Health Department  
 EMS -- Emergency Medical Service  
 HSA -- Health Systems Agency  
 F&D -- State Food and Drug  
 CD -- State Civil Defense

1. Provide State CD and resource management offices with technical advice and information related to provision of emergency health services.
2. Determine administrative and operational priorities as dictated by conditions reported through liaison with Federal agencies and other State agencies.
3. Determine total health requirements and conduct programs to meet State-wide needs for individual medical services, community health services, laboratory services, etc.
4. Provide for support of available surgical and medical services (justify claims for transportation, fuel, water, etc.).
5. Gather, analyze and distribute epidemiological intelligence related to emergency public health situation; advise on control of communicable diseases.

SHD	EMS	CD	HSA	F&D
13	16	7	7	5
15	12	8	3	2
19	12	12	9	2
17	12	12	4	4
19	12	6	3	8

	SHD	EMS	CD	HSA	F&D
6. Establish standards and provide technical information and advice on the salvage, processing, distribution and storage of food and drugs; assist in determining priorities for restoration of facilities.	16	11	11	2	14
7. Establish standards and provide consultation and assistance in operation of blood banks and laboratories.	18	10	3	2	4
8. Provide guidance and leadership to communities in the equitable distribution and effective utilization of health manpower; maintain working relationship with State emergency manpower agencies.	18	12	11	7	4
9. Interpret intelligence information to determine areas of critical health manpower shortages and nearest available resources; prepare claims to Federal authority for additional health manpower to meet State health needs.	19	13	11	11	3
10. Determine most effective intrastate utilization of manpower to meet civilian health needs, develop and coordinate training programs to meet evolving health needs.	18	11	10	7	3
11. Analyze crisis damage to health supplies and equipment and health facilities; periodically reassess their availability within state and adjust as necessary.	18	14	13	6	6

(Intermediate Post-Crisis)

-3-

12. Receive and act on local government claims for health and supporting materiel resources.

13. Determine most effective and efficient intrastate utilization of health materiel resources to meet civilian health needs. Recommend improvisations to compensate for supply shortages and furnish guidance to communities on improvisation and restoration of health facilities.

SHD	EMS	CD	HSA	F&D
16	11	14	9	3
17	14	12	9	7

## APPENDIX D

### SAN FRANCISCO BAY AREA PLANNING

- I. Bay Area Operating Situation  
in the Event of a Major Earthquake
- II. Overview of Bay Area Emergency  
Medical Response Plans



## SAN FRANCISCO BAY AREA PLANNING

### I. OPERATING SITUATION

This section provides the potential operating situation which would prevail in the San Francisco Area following a major earthquake. The information is extracted from Annex T to the FEMA Earthquake Response Plan. The data was originally developed by the National Oceanic and Atmospheric Administration (NOAA). It is included here to provide a fairly comprehensive overview of the range and extent of the potential problem.

#### 1. Casualties

The numbers of deaths and injuries requiring hospitalization are indicated in Chart 1. It should be noted that the figures vary widely, depending on the magnitude of the earthquake, the fault on which it occurs, and the time of day. Deaths and injuries from the postulated earthquakes in the Bay Area will be due principally to the failures of man-made structures and facilities, with the estimates being greatly affected by the location of people at the time of the earthquake--at home, at work, on the streets, or in transit. The quality of the buildings in which these people live and work, as well as the quality of the structures which they are near while in the streets or in transit to their homes or working places, must also be considered in the total estimates of deaths and injuries. In general, previous earthquake experience indicates that an 8.3 shock occurring on either the San Andreas or the Hayward Fault during the night or early morning hours will result in a ratio of 12 deaths per 100,000 population for those people housed in wood frame structures. That portion of the population housed in other types of structures, such as high rises, hotels, apartment complexes, and tenement buildings, will be subject to a higher degree of hazard, with a ratio of 50 per 100,000. Estimates of deaths and injuries resulting from an earthquake occurring during the daytime or normal working hours are more difficult to complete and consequently are less exact.

During the daylight hours many of the 4.6 million persons within the study area will be at work in structures less safe than their wood frame dwellings. Proportions of the population will be in small shopping areas, in schools, in industrial plants, and in office buildings, each of these locations having varying hazard potentials greater or less than that of the residence. Of the total population of the study area, it is reasonable to assume that two million persons will be exposed to no greater hazard than that to which they are exposed during the nighttime hours. Approximately another two million persons will be subjected to a life hazard slightly higher, or approximately a ratio of 52 per 100,000. The balance of the population, about 600,000 people, will be concentrated in multi-story downtown areas during the daytime, and they will be exposed to a life hazard considerably greater, or a ratio of 500 per 100,000. In addition to the number of deaths and injuries anticipated from structural failures, the study includes estimates on the loss of life resulting from dam failure.

## 2. Damage to Vital Public Services, Systems and Facilities

- Medical Facilities and Services. Within the nine counties of the Bay Area there are 85 major hospitals having a bed capacity of 100 or greater. Considering a 90 percent normal occupancy, the total bed capacity within the study area is approximately 36,000. Forty percent of these hospitals still use portions of their building complexes which were constructed prior to 1933, and the survivability of these structures during a major earthquake is questionable. Fifty percent of the hospitals are of brick construction of a type which performs poorly even during moderate shocks. The maximum expected bed loss due to structural failures of the hospitals is estimated to be approximately 18,000, or a 50 percent reduction in capabilities. The use of Package Disaster Hospitals (PDH) would increase the total capacity to approximately 25,000, leaving a shortfall of about 45,000 beds. The shortage of beds, coupled with the loss and damage to facilities and equipment, loss of medical supplies, deaths and injuries to doctors, nurses and technical personnel, and difficulties in obtaining required power, constitutes significant problems in the area of emergency medical assistance.

- Highways, Streets and Bridges

- a. An earthquake of a magnitude of 8.3 along the San Andreas Fault would result in 25 percent of the freeway structures in Marin, San Francisco, San Mateo, and Santa Clara Counties becoming impassable. Freeways in the Daly City-San Bruno-Pacific region would be damaged to the extent that Pacifica and other coastal cities would be isolated. Major stretches of U.S. 101 south of Candlestick Point in San Francisco to San Bruno would be expected to be under water or badly damaged due to soil movement. The Golden Gate Bridge, the Bay Bridge, and the San Mateo Bridge would be out of operation for indefinite periods due to direct damage to the bridge structures and/or approaches.

- b. An earthquake of 8.3 magnitude along the Hayward Fault would result in serious damage. For planning purposes, 50 percent of the freeway structures within 10 miles of either side of the fault would be out of service.

- Transit System (BART) under the estuary would be closed for an indefinite period.

- Railroads. An 8.3 shock on the San Andreas Fault would result in railroad service being out of operation for an indefinite period.

- Airports

- a. An earthquake of a magnitude of 8.3 along the San Andreas Fault would close the following airports for at least one week: Oakland International, Alameda Naval Air Station, and Hamilton Air Force Base. San Francisco International Airport would be nonoperational for a period of several weeks.

- b. An earthquake of a magnitude of 8.3 on the Hayward Fault would close the following airports for a period of several weeks: Oakland International and Alameda Naval Air Station. San Francisco International and Hamilton Air Force Base would be closed for several days.

- Water Systems

a. For planning purposes, it may be assumed that an 8.3 shock on the San Andreas Fault would reduce the aqueduct supply from San Andreas and Crystal Springs reservoirs to 50 percent for approximately one week. Distribution systems damage and water outages within San Francisco would be heavy. Approximately 90 percent of the water outages should be cleared within three weeks.

b. Along the Hayward Fault, earthquakes of either 8.3 or 7.0 magnitudes would cause all aqueducts to fail or be ruptured. Water supplied by conduits would be reduced to 5 percent for a period of 24 hours.

- Natural Gas

a. An earthquake of any magnitude up to and including 8.3 occurring along the San Andreas Fault would not cause excessive damage to the system.

b. Earthquakes of either 8.3 or 7.0 magnitude on the Hayward Fault could be expected to cause all lines to fail because of ground movement.

- Electric Power. For planning purposes, it can be assumed that an earthquake of either 8.3 or 7.0 magnitudes along the San Andreas or Hayward Faults would result in power failures throughout the study area. In general, power outages in San Francisco and Oakland should be expected to be at 100 percent for 24 hours, and thereafter at 75 percent for an additional 24 hours.

- Sewage

a. For planning purposes, it can be assumed that an 8.3 shock along the San Andreas Fault would result in two-thirds of the raw sewage from San Francisco, San Mateo, and Santa Clara Counties being discharged into the Bay. Daly City and nearby communities in and near the fault would be affected principally, with damage patterns generally following those of the water distribution system.

b. An 8.3 earthquake occurring along the Hayward Fault would result in approximately two-thirds of the raw sewage from Alameda, Contra Costa, and Santa Clara counties being discharged into the Bay. Major ground breakage along the fault would likely result in an extensive rupture of sewage lines throughout the cities of Oakland, Hayward, San Leandro, Richmond, Berkeley, and others.

- Petroleum Pipelines. All service lines which bring major amounts of petroleum to San Francisco by crossing the fault line would be out of operation as a result of ground movement. Petroleum pipelines do not have automatic shut-off valves, and if a rupture occurs during the height of the dry season, serious fires could be anticipated in the Berkeley Hills and surrounding areas.

- Communications

a. Public Radio and Television Facilities: (1) An 8.3 shock along the San Andreas Fault would result in all radio and TV facilities in San Francisco and San Mateo being out of operation for a period of 24 hours. (2) In an 8.3 magnitude earthquake along the Hayward Fault, all radio and television facilities in the East Bay cities west of the Berkeley Hills and those in Santa Clara County could be expected to be out of service.

b. Telephone Systems. An 8.3 shock along the San Andreas Fault would cause 50 percent of the telephone systems to be out of service in the counties of San Francisco, San Mateo, Santa Clara, and Marin for an indefinite period due to equipment damage. An 8.3 shock on the Hayward Fault would cause failure of 60 percent of the telephone systems in the counties of Contra Costa, Alameda, Santa Clara, and Marin for an indefinite period.

- Fire-Fighting/Rescue Services. A total of 96 fire stations were surveyed for the study: San Francisco - 44; Oakland - 27; and San Jose - 25.

a. For planning purposes, it can be assumed that an 8.3 shock along the San Andreas Fault would result in ten fire stations (25 percent) in San Francisco receiving significant damage. Six of these ten would have equipment on the street and clear of the station within 15 minutes. Approximately 90 percent of all equipment and manpower would be on the street in 15 minutes. An 8.3 shock along the Hayward Fault would seriously damage five of the stations in Oakland. Two of the stations in or adjacent to the fault zone would be out of operation and their equipment rendered useless.

b. Even though the Fire-Fighting/Rescue forces would have approximately 90 percent of their personnel and equipment available and on the streets, this should not imply an overall effectiveness of 90 percent, since such problems as blocked streets, ruptured water distribution lines, and poor communications would adversely affect operations.

## II. OVERVIEW OF BAY AREA EMERGENCY MEDICAL RESPONSE PLANS

An overview is presented on the following pages for the:

- City and County of San Francisco Plan
- State of California Office of Emergency Services Region II  
Disaster Medical Services
- Sixth U.S. Army Earthquake Response Plan
- Federal Plan for Earthquake Response and Assistance (San Francisco  
Bay Area)

## CITY AND COUNTY OF SAN FRANCISCO PLAN

### A. ASSUMPTIONS

- A large scale disaster such as an earthquake with an 8.3 magnitude can create an excess of 40,000 casualties which will completely overwhelm normal medical care procedures and facilities. Under such conditions, emergency procedures contained in hospital disaster plans will be adequate to meet the immediate needs of the public.

Transfer of significant numbers of casualties to medical facilities outside of the City will be undertaken.

- Public health problems of epidemic proportions can be created by the degrading of water distribution and sewage system. Lack of adequate electrical power will cause serious food spoilage. Mass immunization programs and sanitation problems can be anticipated in the post-disaster period.
- Resupply of necessary medical supplies, medications and whole blood will be extremely difficult at the onset of a disaster.
- There may be substantial damage sustained by hospitals and Department of Public Health facilities, requiring close coordination among those facilities undamaged or with moderate damage.
- Medical radio communications will be available for the conduct of emergency operations.
- Medical radio communications will be available for the conduct of emergency operations.
- Existent ambulances will fall far short of meeting requirements in a major disaster. Augmentation by Muni busses and other vehicles will be adequate.



- Evacuation of casualties by air and water will be employed.
- Sufficient alternates to key positions have been provided.

#### GENERAL CONCEPT OF OPERATIONS

Emergency operations are considered to be extensions of the normal daily functions of the various agencies which make up the service. Only the scope, number and variety of problems encountered will change. This change can completely overwhelm daily routines and procedures. Under such conditions, coordination, cooperation and a free exchange of information between agencies is vital.

The emergency operations of the Chief, Medical and Health Service and EOC staff will consist primarily of coordinating activities between facilities and agencies; problem solving; decision making; and gathering and dissemination of information. They will not direct the internal activities of hospitals or other private agencies.

#### EMERGENCY MEDICAL MUTUAL AID SYSTEM

The established emergency medical mutual aid system provides the smallest hospital with an ability, through channels, to call upon the resources of the entire state (and beyond) to meet their emergency needs for personnel and equipment.

Normally a request for medical mutual aid will originate at the local hospital and be transmitted to the Medical and Health Service staff in the County EOC for action. Requests will only be submitted after all local resources are committed and must be specific as to who or what is needed, when it is needed, where it is needed and the number needed.

When possible, requests will be filled by the Chief, Medical and Health Service from resources available elsewhere in the County.

When the required personnel and/or material is not available from County sources, the request will be forwarded to the State OES Region II Emergency Medical Coordinator for action.

The Regional Coordinator has the medical resources of 16 costal counties to call upon. If the requirement cannot be met with regional resources, the Regional Coordinator will forward the request to the State Emergency Medical Coordinator at OES, Sacramento, who has the ability to call upon the remainder of the State.

If the State's resources are exhausted, the State Emergency Medical Coordinator may, through established procedures, request aid from other states or the Federal government. It should be noted that mutual aid from the Federal government or from other states will take time to obtain. Therefore, this condition must be anticipated and the specific needs for mutual aid assistance must be determined early.

The Medical and Health Service Chief will respond to requests for mutual aid from the State OES Region II Emergency Medical Coordinator by contacting appropriate key officials within those medical facilities thought best able to provide the required aid. If the request involves physicians, nurses and other technicians, hospitals will be asked to call for volunteers. The Chief, Medical and Health Service will provide all available information concerning the request and will coordinate transportation requirements with the Regional Emergency Medical Coordinator.

STATE OF CALIFORNIA  
OFFICE OF EMERGENCY SERVICES  
REGION II DISASTER MEDICAL SERVICES

ASSUMPTIONS

- Initial response shall be local responsibility.
- Mutual aid will be invoked to support local effort.
- Disaster Medical Planning is designed to augment day-to-day emergency medical care services to care for mass casualties.
- A statewide Disaster Medical Organization does not exist on a day-to-day basis, but comes into being in event of a large-scale disaster.
- In times of disaster, there may be multiple claims for the same resource. Therefore, government must establish a mechanism for priority allocation of available resources.

CONCEPT OF OPERATION

Disaster medical response to mitigate suffering and provide for care of casualties will be implemented at three levels of government as follows:

- County: The Chief of Medical and Health Services is the County Health Officer. The Disaster Medical Coordinator is a physician appointed by the County Health Officer.
- Region: The Regional Disaster Medical Coordinator is a physician appointed by the Director of the State Department of Health Services.

- State: The State Chief of Medical and Health Services is appointed by the Governor.

The State Disaster Medical Coordinator is a physician appointed by the Chief of Medical and Health Services

When a major disaster occurs, local authorities within the impacted areas are expected to use all available resources within their area. In the event additional resources are required, medical disaster plans provide for several levels of response based on the resources available.

- Level I (Local Emergency Requiring Mass Casualty Care): Adequate local medical resources are available to meet needs. The city or County Emergency Medical Coordinator arranges for equitable allocation of casualties to available medical facilities within his jurisdiction in accordance with local disaster medical plans.
- Level II (Mass Casualty Emergency Requiring Regional Support): In addition to performing those functions prescribed for a Level I emergency, City and County Emergency Medical Coordinators, in coordination with the Regional Disaster Medical Coordinator, arrange for the utilization of all necessary regional resources.
- Level III (Mass Casualty Emergency Requiring State/Federal Support): A disaster situation wherein medical resources in and near the impacted area are overwhelmed. Deficiencies in medical supplies and personnel are such as to require extensive State/Federal medical resources.

The state plan calls for the establishment of two special facilities—Casualty Collection Points (CCP) and a Disaster Support Area (DSA). At the time of mass casualty, disaster predesignated CCP's will be activated to provide triage and field stabilization prior to transport to acute care facilities.

The DSA is a predesignated (by the Federal government in coordination with the State) Central Facility which is intended to support the CCP's with resources and manpower and in the medical care and regulation of casualties from the disaster area. Travis Air Force Base is the designated DSA for the San Francisco Bay Area.

## SIXTH U.S. ARMY EARTHQUAKE RESPONSE PLAN

### ASSUMPTION

- An 8.0 magnitude earthquake will occur on the San Andreas Fault at a time causing the largest number of casualties.
- A significant portion of all DOD and other Federal medical treatment facilities in the Bay Area will retain hospitalization capability.
- Casualties will be concentrated in high population density and old construction areas.
- There will be a shortage of medical personnel.

Dam failure or damage not considered, anticipated casualties requiring hospitalization number approximately 40,000 with an additional 300,000 casualties requiring minimal treatment. Medical treatment facilities in the Bay Area are expected to suffer a 50 percent loss in hospital bed capacity, creating a significant bed shortfall, necessitating use of non-medical treatment facilities as nursing units.

During the critical first 48 hours, disruption of communications and transportation capability will severely impact upon coordination efforts and the marshalling of military medical personnel, equipment and supplies. Evacuation capability, both within and out of the disaster area, will be drastically curtailed. Control of military medical supplies and equipment, such as litters, will be extremely difficult. Initial demand for blood can be expected to exceed local residual supplies. Immediate medical care on-site will be provided by medical professionals, para-medics, police, firemen and volunteer citizens within their competence.

### CONCEPT OF OPERATION

General. Federal medical facilities will provide EMS, within capabilities, immediately following the earthquake. Organized Search and Rescue and Triage at the disaster scene will be conducted by City, County and State resources initially. Federal field medical units will be employed upon request and will follow the medical evacuation and regulating policies established by the State of California. It is visualized that casualties will concentrate at surviving medical treatment facilities in the disaster area. High priority must be given to evacuation from these facilities to preserve maximum capability for accommodating immediate casualties. The large number of casualties requiring hospitalization produced instantaneously, coupled with a concurrent loss in bed capability, will not permit medical regulating or individual casualties to a specific medical treatment facility. Medical treatment facility complexes outside the disaster area must be identified and casualties moved to them in groups for further evacuation to a specific medical treatment facility.

The Sixth U.S. Army will provide DOD and other Federal Emergency Medical Services (EMS) to the civilian community in support of State and local government in the nine Bay Area counties. Military support other than that which is locally available will begin arriving in the Bay Area about 10 hours after the earthquake and will not be fully in place until 24 hours.

Letterman Army Medical Center (LAMC) is the designated focal point of operations. It is charged with the responsibility of coordinating all Federal medical units displaced in the disaster area. In addition to all the military resources in the area, plans call for further military medical support from:

- Madigan Army Medical Center; Fort Lewis, Washington
- Brooke Army Medical Center; Ft. Sam Houston, Texas
- William Beaumont Army Medical Center; El Paso, Texas
- Fort Carson, Colorado
- Fort Ord, California
- Fort Riley, Kansas

FEDERAL PLAN FOR EARTHQUAKE RESPONSE AND ASSISTANCE  
(San Francisco Bay Area)  
(Federal Emergency Management Agency) 1979

ASSUMPTIONS

- A major earthquake occurring within the nine-county Bay Area will result in numerous deaths and injuries to the populace, and cause extensive damage to public and private property;
- The earthquake will occur without warning and at a time of day that will produce maximum casualty loss; access to and from the damaged areas may be severely restricted for hours and perhaps days; landline communication will be severely disrupted; and the maximum possible non-resident population will be present in the affected areas;
- The effects of the earthquake will be so extensive that Federal personnel resources and material to meet immediate emergency needs within the affected areas may be required for several months. Permanent recovery and rehabilitation efforts by tasked Federal agencies may require commitment of Federal manpower and material for up to a year.
- The earthquake will trigger secondary events such as a tsunami, landslides, flooding; the result of dams bursting, fires, and after-shock.
- In order to maintain socio-economic integrity of affected community ties, evacuation of permanent residents will be limited to those victims whose needs cannot be locally administered or met.
- The effects of the disaster will be so severe and widespread and the need for Federal assistance so urgent as to result in an immediate declaration of a Major Disaster by the President.

### CONCEPT OF OPERATION

Commander, Sixth U.S. Army has primary responsibility for organizing and conducting the efforts of Federal agencies in the conduct of emergency medical care in the San Francisco Bay Area. Federal medical facilities will provide Emergency Medical Services (EMS) within capabilities, immediately following the earthquake. Organized Search and Rescue and Triage at the disaster scene will be conducted by City, County, and State resources initially. Federal field medical units will be employed upon request, and will follow the medical evacuation and regulating policies established by the State of California.

It is visualized that casualties will initially concentrate at surviving medical treatment facilities in the disaster area. The large number of casualties requiring hospitalization, coupled with the anticipated loss in bed capacity, is expected to cause an immediate shortage of hospital beds. Hospitals outside the disaster area will be identified early on, and casualties moved to them as quickly as possible in order to preserve the maximum capability of hospitals within the disaster area to provide immediate care to those most in need.

#### Participating Agencies are:

- Department of Defense
- Veterans Administration
- Maritime Administration
- American National Red Cross

#### Agency functions are:

- Department of Defense: Provide DOD and other Federal agencies' assets for Emergency Medical Services (EMS) to disaster victims in support of State and local governmental EMS in the disaster area.
- Veterans Administration: Provide supplemental medical assistance from VA medical centers in Livermore, Martinez, Palo Alto, and San



Francisco; provide short-term hospitalization pending transfer to civilian health care facilities.

- Maritime Administration: provide medical facilities and non-perishable medical supplies aboard ships in the National Defense Reserve Fleet, Suisun Bay, California; be prepared to unload ships in their present location or to move them into San Francisco Bay to be used as hospitals and medical supply points.

- American National Red Cross: utilize available volunteer personnel to man and operate emergency aid stations at Red Cross operated shelters, Red Cross disaster field offices, clean-up sites and other sites as necessary; provide first aid, emotional support, and medical care of minor illnesses within capabilities.

June 1980

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THE POTENTIAL LINKAGE BETWEEN EMERGENCY MEDICAL SERVICES  
SYSTEMS AND HEALTH SYSTEMS AGENCIES TO CIVIL DEFENSE  
RELATED HEALTH AND MEDICAL CARE PLANS AND OPERATIONS

NATIONAL CAPITOL SYSTEMS, INC.  
1900 L Street, N.W., Suite 310  
Washington, D.C. 20036

Contract No.:  
DCPA-01-79-C-0232  
Work Unit 2422H  
July 1980  
129 Pages

ABSTRACT

This report addresses the potential Civil Defense-related  
role of existing Health Systems Agencies (HSA) and Emer-  
gency Medical Services Systems (EMSS).

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